Final

ENVIRONMENTAL ASSESSMENT

FOR

EOD STAND-UP AT NAS FORT WORTH JRB

MARCH 2012

Report Documentation Page

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FINAL

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
EOD STAND-UP AT NAS FORT WORTH JRB

Pursuant to the Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA; 40 Code of Federal Regulations [CFR] 1500-1508) and 32 CFR Part 989, the 301st Fighter Wing (301 FW) Mission Support Group/Environmental Flight (301 MSG/CEV) has prepared an Environmental Assessment (EA) to identify and evaluate potential environmental consequences from the stand-up of an Explosive Ordnance Disposal (EOD) Flight at Naval Air Station (NAS) Fort Worth Joint Reserve Base (JRB). This EA is incorporated by reference into this FONSI.

PURPOSE AND NEED

The purpose for the Proposed Action is to stand up a new EOD Flight and to provide necessary facility space for EOD operations and training ranges. The Proposed Action is needed to increase Air Force Reserve Command's (AFRC's) ability to address current and emerging missions by adding personnel to existing and new units to reduce the overall operational stress on the total force and to reduce the amount of time currently required for responding to military munitions hazards in the area. (EA Section 1.2)

DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action would take place at NAS Fort Worth JRB. The 301 EOD Flight would consist of 14 total personnel, 6 Active/Guard Reservists (AGR) and 8 Traditional Reservists (TR). Stand-up of the EOD Flight would require the following actions:

1. Temporary use of available office and work space for EOD functions,
2. Renovation of a facility to temporarily house EOD operations,
3. Space for temporary siting of an Advanced EOD Storage Magazine (ARMAG),
4. Space for development of an EOD Proficiency Range and permanent ARMAG,
5. Space for development of an EOD Practical Training Area and permanent siting of the ARMAG to be moved from the temporary location, and
6. Future construction of a Permanent EOD Facility.

Facility siting and EOD operations would comply with United States Navy (USN) and United States Air Force (USAF) safety standards and requirements set forth respectively in Naval Sea Systems Command Manual, NAVSEA OP 5, *Ammunition and Explosives Safety Ashore*, Volume 1 and in Air Force Manual (AFMAN) 91-201, *Explosives Safety Standards*, which implements AFPD 91-2, *Safety Programs*, and DoD 6055.09-M, Volumes 1-8, *DoD Ammunition and Explosives Safety Standards*. (EA Section 2.2)

DESCRIPTION OF THE NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the 301 FW and NAS Fort Worth JRB associate units would continue to request EOD support from Dyess Air Force Base (AFB), Texas, and Fort Hood, Texas. EOD support from these locations requires a 3- to 4-hour response time which would expose personnel to explosive hazards for a longer period of time than if the response team were located at NAS Fort Worth JRB. The No-Action Alternative also would impact mission accomplishment by preventing personnel movement within any cordoned area while awaiting EOD support. Further, civilian and federal law enforcement agencies in the local area would be subject to similar prolonged EOD response time for military munitions found outside of military installations in the area. (EA Section 2.3)

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

Headquarters (HQ) AFRC considered two alternative sites for the proposed EOD ranges, Fort Wolters and the Texas Army National Guard (TXARNG) Eagle Mountain Lake Training Site, in addition to the proposed ranges at NAS Fort Worth JRB. Preliminary evaluation of the sites determined that the logistics and resource requirements associated with the Proposed Action would be significantly higher at Fort Wolters and the Eagle Mountain Lake Training Site, as compared to proposed locations at NAS Fort Worth JRB. Further, respective installation authorities were opposed to EOD detonations at both of these locations. Based on these considerations, it was determined that NAS Fort Worth JRB was the most likely site to support the Proposed Action. (EA Section 2.4)

ANTICIPATED ENVIRONMENTAL EFFECTS

The Proposed Action would have negligible or minor effects on surface water quality, floodplains and storm water, air quality, solid waste, hazardous materials and waste, and insignificant adverse effects on the noise environment, as well as mixed (both adverse and beneficial) effects on safety. No other effects associated with the Proposed Action were identified. The No-Action Alternative would have an insignificant adverse effect on safety, but would not accomplish the stated purpose and need for the Proposed Action (EA Section 2.6)

Surface Water, Floodplains, StormWater: All construction activities would comply with appropriate local, state, and federal regulations and permits, including an approved Erosion, Sediment, and Pollution Control Plan (ESPCP) and NAS Fort Worth JRB's *Stormwater Pollution Prevention Plan.* As necessary, best management practices (BMPs) would be used to minimize potentially adverse impacts to surface water quality. Based on the relatively small quantities of explosives to be used during operation and the relatively small number of detonations that would produce minor particulate air emissions as part of the Proposed Action, negligible or minor effect on surface water quality would be expected from settled air particulates. The design of the permanent EOD Facility would comply with the Energy Independence Security Act (EISA) storm water management requirements with the objective of maintaining predevelopment hydrology and preventing any net increase in storm water runoff to the maximum extent technically feasible. The potential increase in storm water runoff from the EOD ranges would be minor and would not threaten receiving water bodies or floodplains.

Air Quality: Construction/renovation activities would cause temporary, insignificant adverse impacts to air quality from the operation of heavy machinery and construction employee traffic. EOD operations would produce minor air emissions primarily associated with the detonation of explosive materials. These emissions would be considered *de minimis* and would not be subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP), New Source Performance Standards, applicability analysis under the General Conformity Rule, or New Source Review permitting. In addition, air emissions from EOD operations would not increase ambient air pollutant concentrations above National Ambient Air Quality Standards (NAAQS), contribute to an existing violation of NAAQS, or interfere with or delay the attainment of NAAQS. (EA Section 3.3)

Solid Waste: Construction/renovation activities would create a temporary, insignificant increase in solid waste generation. EOD operations would generate insignificant amounts of additional solid waste over the long-term. Solid waste would be reused or recycled, as practicable, and, if necessary, would be handled in accordance with the Resource Conservation and Recovery Act (RCRA), the US Navy's Environmental Readiness Program Manual (ERPM), and NAS Fort Worth JRB's Integrated Solid Waste Management Plan (ISWMP). (EA Section 3.4.1)

Hazardous Materials and Waste: Hazardous materials, such as fuels for demolition/construction equipment and vehicles, would be used during the construction/renovation activities at each of the Proposed Action Sites. Any hazardous materials used or encountered during demolition/construction would be managed in accordance with NAS Fort Worth JRB's HWMP and all applicable local, state, and federal regulations, so no adverse impacts would occur. EOD-related explosives would be used according

to their intended purpose during EOD operations and would be stored at the proposed ARMAGs in accordance with AFMAN 91-201. These materials would be destroyed during EOD operations and would not become hazardous waste. (EA Section 3.4.2)

Noise Environment: Construction/renovation activities would cause temporary, localized, insignificant adverse impacts to the noise environment. EOD operations would result in an insignificant adverse impact to the noise environment on, and in the vicinity of, NAS Fort Worth JRB. EOD operations would not alter acceptable land uses in areas surrounding the base nor would they pose hearing conservation risks to the general public. Depending upon weather conditions, some single event peak sound levels from detonations could be sufficiently loud to cause some degree of annoyance to off-base noise receptors in outdoor areas adjacent to NAS Fort Worth JRB. Hearing protection for NAS Fort Worth JRB personnel, if required, would comply with Occupational Safety and Health Administration (OSHA) and USAF Environment, Safety, and Occupational Health (ESOH) requirements. (EA Section 3.5)

Safety: Implementation of the Proposed Action would have mixed effects on safety on, and in the vicinity of, NAS Fort Worth JRB. There would be beneficial effects from the local presence of the EOD Flight at NAS Fort Worth JRB, and insignificant adverse effects associated with the added risk from transportation, storage, and handling of explosives, and the need to establish clear zones around training areas in accordance with USAF requirements. (EA Section 3.7)

CUMULATIVE IMPACTS

The cumulative effects of the Proposed Action when added to other past, present, and reasonably foreseeable future actions were evaluated and found to be insignificant. Implementation of the Proposed Action would result in minor incremental increases in storm water runoff and air pollutant emissions, and minor increases in solid and hazardous waste generation, insignificant increases in noise levels on and off the installation, and increased risk from the transport, handling, and storage of munitions. (EA Section 3.8)

PUBLIC NOTICE

A notice was published on 12 Feb 2012, in the *Fort Worth Star Telegram*, inviting the public to review and comment on the Draft EA and copies of these documents were available for review at the White Settlement, River Oaks, and Fort Worth Ridglea Branch Libraries. Copies of the EA also were submitted to state agencies requesting review. Comments received during the 30-day review period are addressed in the Final EA. All agency consultation is complete.

FINDING OF NO SIGNIFICANT IMPACT

The Proposed Action involves the stand-up of a new EOD Flight at NAS Fort Worth JRB. Based upon my review of the facts and analyses contained in the EA, which is hereby incorporated by reference, I conclude that the Proposed Action will not have a significant impact on the natural or human environment. An Environmental Impact Statement (EIS) is not required for this action. This analysis fulfills the requirements of NEPA, the President's Council on Environmental Quality, and 32 CFR Part 989.

Ronald B. Miller

RONALD B. MILLER, Brig Gen, USAFR
Commander

9 MAR 2012
Date

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COVER SHEET

FINAL ENVIRONMENTAL ASSESSMENT FOR STAND-UP OF AN EXPLOSIVE ORDNANCE DISPOSAL (EOD) UNIT AT NAS FORT WORTH JRB, TEXAS

Responsible Agencies: U.S. Air Force (USAF), Air Force Reserve Command (AFRC), 301st Fighter Wing (301 FW), and Naval Air Station (NAS) Fort Worth Joint Reserve Base (JRB).

Affected Location: NAS Fort Worth JRB, Texas

Proposed Action: Stand-up of the 301st Civil Engineer Squadron (301 CES) EOD Flight comprised of 14 EOD personnel; renovation/construction of buildings for office, work space and EOD operations; development of a Proficiency Range and a Practical Training Range; and siting of associated temporary and permanent Advanced EOD Storage Magazines (ARMAGs) at NAS Forth Worth JRB.

Report Designation: Final Environmental Assessment (EA).

Abstract: The purpose of the Proposed Action is to stand up the 301 CES EOD Flight and to construct and operate EOD facilities at NAS Fort Worth JRB. This EA evaluates and documents the environmental effects expected from stand-up of the EOD Flight. Under the No-Action Alternative, the 301st FW and NAS Fort Worth JRB associate units would continue to request EOD support from Dyess Air Force Base (AFB), Texas, and Fort Hood, Texas.

Based on this analysis, implementation of the Proposed Action would not have a significant impact on the natural or human environment. Therefore, preparation of an Environmental Impact Statement (EIS) is not required, and a Finding of No Significant Impact (FONSI) will be published in accordance with the National Environmental Policy Act (NEPA).

The Draft EA and FONSI were available for review and comment for 30 days from publication of a Notice of Availability (NOA) in the local newspaper, the *Fort Worth Star Telegram*, and copies of these documents were available for review at the White Settlement, River Oaks, and Fort Worth Ridglea Branch Libraries. Written comments and inquiries regarding the EA were directed to Mr. Randy Varner, 301 MSG/CEV Environmental Department (N45), 1215 Military Parkway, NAS Fort Worth JRB, Texas 76127-6200.

Privacy Notice

Public comments on the Draft EA were requested. Letters or other written or oral comments provided may be published in the Final EA. All comments received during the comment period were considered during preparation of the Final EA. Any personal information provided was used only to identify the commenters' desire to make a statement during the public comment period or to fulfill requests for copies of the EA or associated documents. Private addresses were compiled to develop a mailing list for those requesting copies of the Final EA. However, only the names of the individuals making comments and specific comments were disclosed. Personal home addresses and phone numbers were not published in the Final EA

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Final

ENVIRONMENTAL ASSESSMENT

FOR

EOD STAND-UP AT NAS FORT WORTH JRB

301st Fighter Wing
Mission Support Group/Environmental Flight
NAS Fort Worth JRB, Texas

MARCH 2012

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SUMMARY

As part of the United States Air Force's (USAF's) Environmental Impact Analysis Process (EIAP), the 301st Fighter Wing (301 FW) Mission Support Group/Environmental Flight (301 MSG/CEV) at Naval Air Station (NAS) Fort Worth Joint Reserve Base (JRB), Texas is conducting an Environmental Assessment (EA) to determine potential environmental consequences from the stand-up of an explosive ordnance disposal (EOD) unit. NAS Fort Worth JRB, comprised of approximately 1,805 acres, is located in the western portion of Fort Worth in Tarrant County, south of Lake Worth. The purpose for the Proposed Action is to stand up of a new EOD Flight and to provide necessary facility space for EOD operations and training ranges. The Proposed Action is needed to increase Air Force Reserve Command's (AFRC's) ability to address current and emerging missions by adding personnel to existing and new units to reduce the overall operational stress on the total force and to reduce the response time for local military munitions hazard response.

Proposed Action and Alternatives

The 301 EOD Flight would consist of 14 total personnel, 6 Active/Guard Reservists (AGR) and 8 Traditional Reservists (TR). Facility siting and EOD operations would comply with United States Air Force (USAF) safety standards set forth in Air Force Manual (AFMAN) 91-201, *Explosives Safety Standards*, which implements AFPD 91-2, *Safety Programs*, and DoD 6055.09-M, Volumes 1-8, *DoD Ammunition and Explosives Safety Standards*. Stand-up of the EOD Flight would require the following actions:

1. Temporary use of available office and work space for EOD functions,
2. Renovation of a facility to temporarily house EOD operations,
3. Space for temporary siting of an Advanced EOD Storage Magazine (ARMAG),
4. Space for development of an EOD Proficiency Range and permanent ARMAG,
5. Space for development of an EOD Practical Training Area and permanent siting of the ARMAG to be moved from the temporary location, and
6. Future construction of a Permanent EOD Facility.

Headquarters (HQ) AFRC considered two alternative sites for the proposed EOD ranges, Fort Wolters and the Texas Army National Guard (TXARNG) Eagle Mountain Lake Training Site, in addition to the proposed ranges at NAS Fort Worth JRB. Preliminary evaluation of the sites determined that the logistics and resource requirements associated with the Proposed Action would be significantly higher at Fort Wolters and the Eagle Mountain Lake Training Site, as compared to proposed locations at NAS Fort Worth JRB. Further, respective installation authorities were opposed to EOD detonations at both of these locations. Based on these considerations, it was determined that NAS Fort Worth JRB was the most likely site to support the Proposed Action.

Under the No-Action Alternative, The Proposed Action would not be implemented. The 301 FW and NAS Fort Worth JRB associate units would continue to request EOD support from Dyess AFB and Fort Hood, Texas.

Environmental Consequences

Implementing the Proposed Action would result in short- and long-term minor adverse and beneficial effects. Proposed construction activity would have negligible or minor effects on floodplains, storm water, air quality, solid waste, hazardous materials and waste, and the noise environment. EOD operations would have negligible or minor effects on surface water quality, floodplains, storm water, air quality, solid waste, hazardous materials and waste, and insignificant adverse effects on the noise environment, as well as insignificant adverse and beneficial effects on safety factors. No other effects associated with the Proposed Action were identified.

The No-Action Alternative would have an insignificant adverse effect on safety, but would not accomplish the stated purpose and need for the Proposed Action. EOD support from Dyess AFB and Fort Hood requires a 3- to 4-hour response time which would expose personnel to explosive hazards for a longer period of time than if the response team were located at NAS Fort Worth JRB. The No-Action Alternative also would impact mission accomplishment by preventing personnel movement within any cordoned area while awaiting EOD support. Further, civilian and federal law enforcement agencies in the local area would be subject to similar prolonged EOD response time for military munitions found outside of military installations in the area.

The cumulative effects of the Proposed Action would be negligible or minor. Implementation of the Proposed Action would result in minor incremental increases in storm water runoff, air pollutant emissions, solid and hazardous waste generation, insignificant increases in noise levels on and off the installation, and increased risk from the transport, handling, and storage of munitions.

Conclusions

Based upon review of the facts and analyses contained in the EA, the Proposed Action would not have a significant impact on the natural or human environment. The EA does not identify the need for mitigation measures. A Finding of No Significant Impact (FONSI) is appropriate, and an Environmental Impact Statement (EIS) is not required for this action.

CONTENTS

TABLES

FIGURES

APPENDICES

ABBREVIATIONS & ACRONYMS

301 CES	301st Civil Engineer Squadron
301 FW	301st Fighter Wing
301 MSG/CEV	301st Mission Support Group/Environmental Flight
136 AW	136th Air Wing
ac	acre(s)
AFB	Air Force Base
AFI	Air Force Instruction
AFMAN	Air Force Manual
AFPD	Air Force Policy Directive
AFH	Air Force Handbook
AFRC	Air Force Reserve Command
AFRCH	Air Force Reserve Command Handbook
AGR	Active/Guard Reservists
AICUZ	Air Installation Compatible Use Zone
ARMAG	Advanced EOD Storage Magazine
ATFP	Anti-Terrorism Force Protection
BMP	Best Management Practice
BOS	Base Operating Support
BSERV	Base Support EOD Response Vehicle
CAA	Clean Air Act
CDNL	C-Weighted Day-Night Noise Level
CE	Civil Engineer
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
$CO_{2\text{-}e}$	Carbon Dioxide-equivalent
dB	Decibel
DNL	Day-Night Average Noise Level
DoD	Department of Defense
DODIC	Department of Defense Identification Code
DOPAA	Description of Proposed Action and Alternatives
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act of 2007
EO	Executive Order

ABBREVIATIONS & ACRONYMS, continued

EOD	Explosive Ordnance Disposal
EPCRA	Emergency Planning and Community Right-to-Know Act
ERPM	Environmental Readiness Program Manual
ESOH	Environment, Safety, and Occupational Health
ESPCP	Erosion, Sediment, and Pollution Control Plan
FG	Fluorinated Gas
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
ft	foot/feet
ft^2	square foot/feet
GHG	Greenhouse Gas
HC	Halocarbon
HD	Hazard Division
HQ	Headquarters
HWMP	Hazardous Waste Management Plan
IDS	Intrusion Detection System
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
ISWMP	Integrated Solid Waste Management Plan
JRB	Joint Reserve Base
lbs	pounds
LID	Low Impact Development
LPS	Lightning Protection System
m	meter(s)
m^2	square meter(s)
$\mu g/m^3$	micrograms per cubic meter
MACT	Maximum Achievable Control Technology
MILCON	Military Construction
MWD	Military Working Dog
N_2O	Nitrous Oxide
NA	Not Available
NAAQS	National Ambient Air Quality Standards
NAS	Naval Air Station
NEPA	National Environmental Policy Act
NESHAP	National Emission Standards for Hazardous Air Pollutants
NEW	Net Explosive Weight
NO_2	Nitrogen Dioxide
NOA	Notice of Availability
NO_x	Nitrogen Oxides
NRHP	National Register of Historic Places

ABBREVIATIONS & ACRONYMS, continued

NSR	New Source Review
O_3	Ozone
O&M	Operations and Maintenance
OSHA	Occupational Safety and Health Administration
Pb	Lead
PCB	Polychlorinated Biphenols
PM	Particulate Matter
ppb	parts per billion
ppm	parts per million
PSD	Prevention of Significant Deterioration
QD	Quantity Distance
RCRA	Resource Conservation and Recovery Act
SO_2	Sulfur Dioxide
SPPP	Stormwater Pollution Prevention Plan
TAC	Texas Administrative Code
TCEQ	Texas Commission of Environmental Quality
TNT	2,4,6-Trinitrotoluene
TR	Traditional Reservists
TTPs	Tactics, Techniques, and Procedures
TXANG	Texas Air National Guard
TXARNG	Texas Army National Guard
US	United States
U.S.C	United States Code
USAF	United States Air Force
USEPA	United States Environmental Protection Agency
USN	United States Navy
UTC	Unit Type Code
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound

1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 BACKGROUND

As part of the United States Air Force's (USAF's) Environmental Impact Analysis Process (EIAP), the 301st Fighter Wing (301 FW) Mission Support Group/Environmental Flight (301 MSG/CEV) at Naval Air Station (NAS) Fort Worth Joint Reserve Base (JRB), Texas is conducting an Environmental Assessment (EA) to determine potential environmental consequences from the stand-up of an explosive ordnance disposal (EOD) unit. The EA was conducted in accordance with the Council on Environmental Quality (CEQ) guidelines for satisfying requirements of the National Environmental Policy Act (NEPA) of 1969. The EA analyzed the Proposed Action and other alternatives, including the No-Action Alternative.

When EA analyses indicate that implementation of a Proposed Action would not result in significant environmental or socioeconomic impacts, a Finding of No Significant Impact (FONSI) is prepared. The FONSI explains why the Proposed Action would not have a significant effect on the human environment and explains why the preparation of an Environmental Impact Statement (EIS) would not be necessary. When an EA analysis indicates significant adverse environmental effects that cannot be mitigated to insignificant levels, then an EIS is prepared or the Proposed Action is abandoned and no action is taken.

NAS Fort Worth JRB, formerly Carswell Air Force Base (AFB), is now a joint defense facility under the command of Commander Navy Installations Command since 1 October 1994. The mission of NAS Fort Worth JRB is to provide unsurpassed support and quality training for Reserve and Guard "war fighters" in all branches of the Armed Services. The Joint Base serves the reservists, active duty tenants, and surrounding communities while accomplishing its primary purpose of defense readiness for America. The Joint Base's primary responsibility is to train and equip air crews and aviation ground support personnel in preparation for deployment (NAS Fort Worth JRB website). NAS Fort Worth JRB is headquarters (HQ) for the Tenth Air Force, home to the 301 FW of the Air Force Reserve Command (AFRC), the 136th Airlift Wing (136 AW) of the Texas Air National Guard (TXANG), and numerous Navy and Marine Corp units. AFRC has gained more than 4,000 manpower authorizations, a portion of which included EOD personnel, to increase AFRC's ability to support current and emerging missions. New Unit Type Codes (UTCs) are being added to existing and new units to reduce the overall stress on the total force. The 301 EOD Flight is a new unit assigned to the 301st Civil Engineer Squadron (301 CES) at NAS Fort Worth JRB as part of these manpower authorizations.

NAS Fort Worth JRB, comprised of approximately 1,805 acres (ac), is located in the western portion of Fort Worth in Tarrant County, south of Lake Worth (**Figure 1**). Nearby communities include Benbrook, Fort Worth, Lake Worth, River Oaks, Westworth Village, and White Settlement. Land use adjacent to the air station includes mainly parks, open space, single family residential, schools and other public facilities, and commercial use.

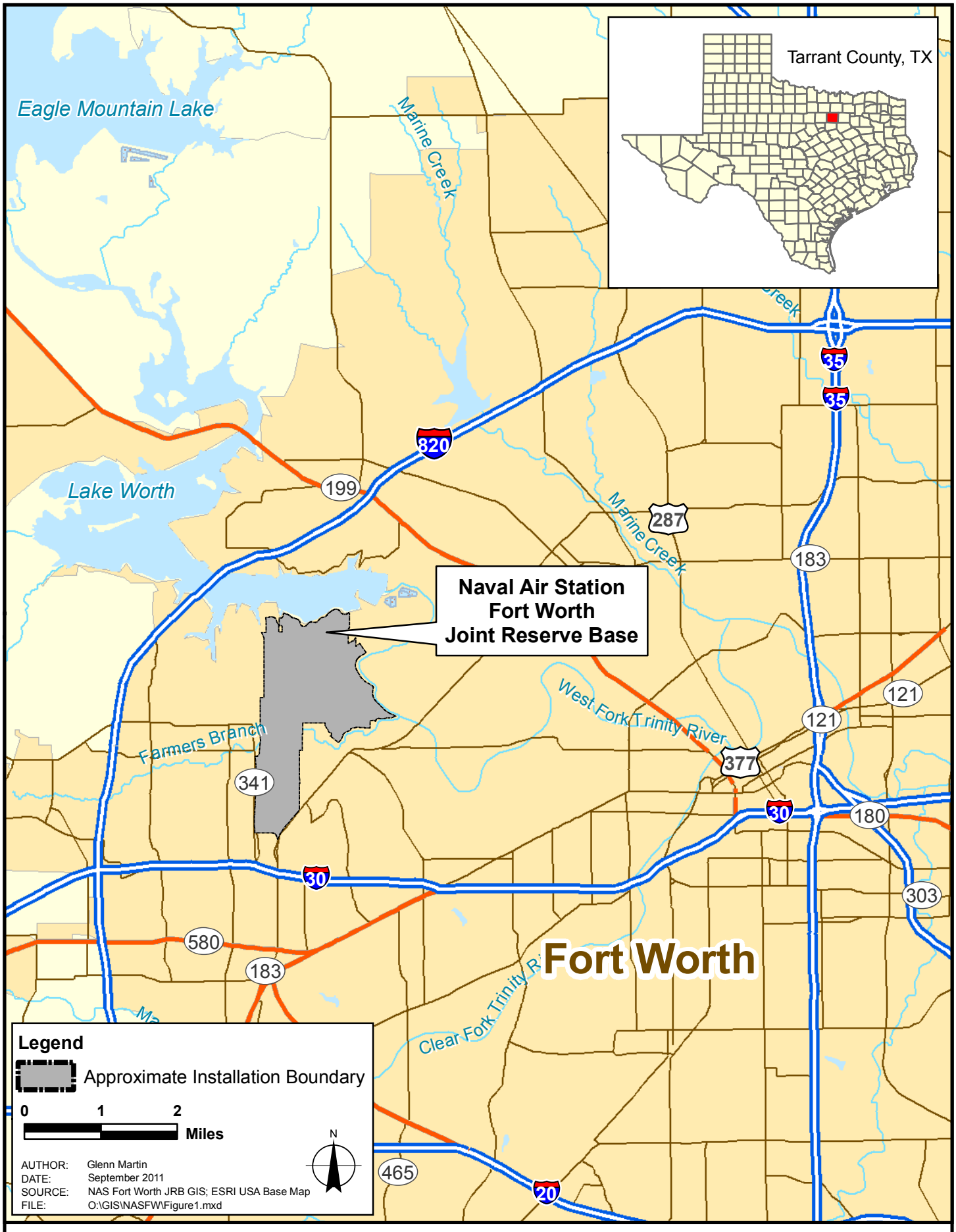

Figure 1. Location Map

1.2 PURPOSE AND NEED FOR THE PROPOSED ACTION

The purpose for the Proposed Action is to stand up a new EOD Flight and to provide necessary facility space for EOD operations and training ranges. The Proposed Action is needed to increase AFRC's ability to address current and emerging missions by adding EOD personnel to existing and new units to reduce the overall operational stress on the total force; to meet national security objectives; and to maintain mission efficiency in accordance with requirements of Air Force Instruction (AFI) 32-3001, *Explosive Ordnance Disposal Program*. Stand-up of the new EOD Flight also would reduce the amount of time currently required for responding to military and civil government munitions hazards in the area. This would reduce potential impact to NAS Fort Worth JRB missions by reducing the amount of time personnel would be excluded from cordoned areas during a munitions hazard event. Further, the presence of an EOD Flight on the installation would reduce the overall response time needed to address military munitions found outside of military installations in the local area.

1.3 KEY ENVIRONMENTAL COMPLIANCE REQUIREMENTS

1.3.1 National Environmental Policy Act

NEPA (52 United States Code [U.S.C] Section 432-4347) is a federal statute requiring the identification and analysis of potential environmental impacts associated with proposed federal actions before those actions are taken. The intent of NEPA is to help decision-makers make well-informed decisions based on an understanding of the potential environmental consequences and to take actions to protect, restore, or enhance the environment. NEPA established the CEQ that was charged with the development of implementing regulations and ensuring federal agency compliance with NEPA. The CEQ regulations mandate that all federal agencies use a prescribed, structured approach to environmental impact analysis. This approach also requires federal agencies to use an interdisciplinary and systematic approach in their decision-making process. This process evaluates potential environmental consequences associated with a Proposed Action and considers alternative courses of action.

The process for implementing NEPA is codified in Title 40 Code of Federal Regulations (CFR), Parts 1500-1508, *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. The CEQ was established under NEPA to implement and oversee federal policy in this process. The CEQ regulations specify that an EA be prepared to briefly provide evidence and analysis for determining whether to prepare a FONSI (and Finding of No Practicable Alternative [FONPA] where appropriate for effects on floodplains or wetlands), or whether the preparation of an EIS is necessary. The EA can aid in an agency's compliance with NEPA when an EIS is unnecessary and facilitate preparation of an EIS when one is required.

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable federal, state, and local environmental laws and regulations, including NEPA. The EIAP (32 CFR, Part 989, as amended) is the USAF's implementing regulation for compliance with NEPA.

1.3.2 Integration of Other Statutes and Regulations

To comply with NEPA, the planning and decision-making process for actions proposed by federal agencies involves consideration of other relevant environmental statutes and regulations. The NEPA process does not replace procedural or substantive requirements of other environmental statutes and regulations. It addresses them collectively in the form of an EA or EIS that enables the decision-maker to have a comprehensive view of major environmental issues and requirements associated with the Proposed Action. According to CEQ regulations, the requirements of NEPA must be integrated with other planning and environmental review procedures required by law or by agency, so that all such procedures run concurrently, rather than consecutively.

1.4 INTERAGENCY COORDINATION AND PUBLIC INVOLVEMENT

The Intergovernmental Coordination Act and Executive Order (EO) 12372, *Intergovernmental Review of Federal Programs*, require federal agencies to cooperate with and consider state and local views in implementing a federal action. AFI 32-7060, *Interagency and Intergovernmental Coordination for Environmental Planning*, requires a process known as Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) and implements Department of Defense (DoD) Directive 4165.61, *Intergovernmental Coordination of DoD Federal Development Programs and Activities*. The process is used for interagency coordination and scoping. Through the IICEP process, the 301 FW will notify relevant federal, state, and local agencies, and the surrounding communities of the Proposed Action and provide sufficient time for each to identify potential environmental concerns associated with the proposal.

A Notice of Availability (NOA) for the Draft EA and Draft FONSI, if appropriate, will be published in local newspapers and copies of the documents will be made available in local libraries. The NOA will notify agencies and interested parties of the 301 FW's intent to solicit comments on the Proposed Action and involve agencies and the public in the decision-making process. Comments received will be considered by the 301 FW and incorporated into the EA.

1.5 DOCUMENT ORGANIZATION

The Description of the Proposed Action and Alternatives (DOPAA) comprises the first two chapters of the EA. **Chapter 1** provides background information on NAS Fort Worth JRB, statement of the purpose and need for the Proposed Action, summary of applicable regulatory requirements, discussion of agency coordination and public involvement, and a description of EA document organization. **Chapter 2** provides a detailed description of the Proposed Action, a discussion of the alternatives considered, including the No-Action Alternative, and identification of the preferred alternative. **Chapter 3** of the EA contains a general description of environmental resources and baseline conditions that could be potentially affected by implementation of the Proposed Action or the No-Action Alternative, and provides analysis of the consequences of the Proposed Action and No-Action Alternatives, including cumulative effects. **Chapter 4** lists preparers of the EA. **Chapter 5** lists persons contacted during preparation of the EA, and references are provided in **Chapter 6**.

Relevant appendices used to support the analysis include: a list of the relevant laws, regulations, and other requirements often considered as part of the EIAP provided in **Appendix A**; IICEP materials along with public and agency comments, if received, provided in **Appendix B**; and noise analysis documentation provided in **Appendix C**.

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2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

2.1 THE PROPOSED ACTION

The Proposed Action would take place at NAS Fort Worth JRB. The 301 EOD Flight would consist of 14 total personnel, 6 Active/Guard Reservists (AGR) and 8 Traditional Reservists (TR). The 301 EOD Flight has a Base Operating Support (BOS) mission to provide EOD response in support of flying operations for assigned F-16 aircraft, associate unit F/A-18 and C-130 aircraft, installation force protection, federal and local law enforcement agencies and nearby DoD installations.

Stand-up of the EOD Flight would require the following actions (see **Figure 2** for Proposed Action locations):

1. Temporary use of available office and work space for EOD functions,
2. Renovation of a facility to temporarily house EOD operations,
3. Space for temporary siting of an Advanced EOD Storage Magazine (ARMAG),
4. Space for development of an EOD Proficiency Range and permanent ARMAG,
5. Space for development of an EOD Practical Training Area and permanent siting of the ARMAG to be moved from the temporary location, and
6. Future construction of a Permanent EOD Facility.

Facility siting and EOD operations would comply with United States Navy (USN) and United States Air Force (USAF) safety standards and requirements set forth respectively in Naval Sea Systems Command manual, NAVSEA OP 5, *Ammunition and Explosives Safety Ashore*, Volume 1 and in Air Force Manual (AFMAN) 91-201, *Explosives Safety Standards*, which implements AFPD 91-2, *Safety Programs*, and DoD 6055.09-M, Volumes 1-8, *DoD Ammunition and Explosives Safety Standards*.

2.2 DETAILED DESCRIPTION OF THE PROPOSED ACTION

2.2.1 EOD Temporary Operations Facilities

Initial EOD operations would be carried out in Building 1651 (B-1651) and B-1653. Due to B-1653's proximity to Hensley Avenue, Anti-Terrorism Force Protection (ATFP) standards would not allow the facility to accommodate the full complement of 14 EOD personnel, so available space in B-1651 would be used for temporary office, classroom, and storage space for proposed EOD functions (**Figure 3**). There would be immediate renovation of B-1653 to provide a temporary facility to house EOD operations. This building is only used for storage of Civil Engineer (CE) UTC equipment, and a portion of this facility would be remodeled to provide a storage area with mezzanine for storage of personal and UTC equipment. A mobile armory storage container would also be placed in this area for storage of daily use and mobility weapons. The facility would include an open bay for parking the Base Support EOD Response Vehicle (BSERV) and EOD support vehicle as well as a bathroom, break room and offices for up to six personnel.

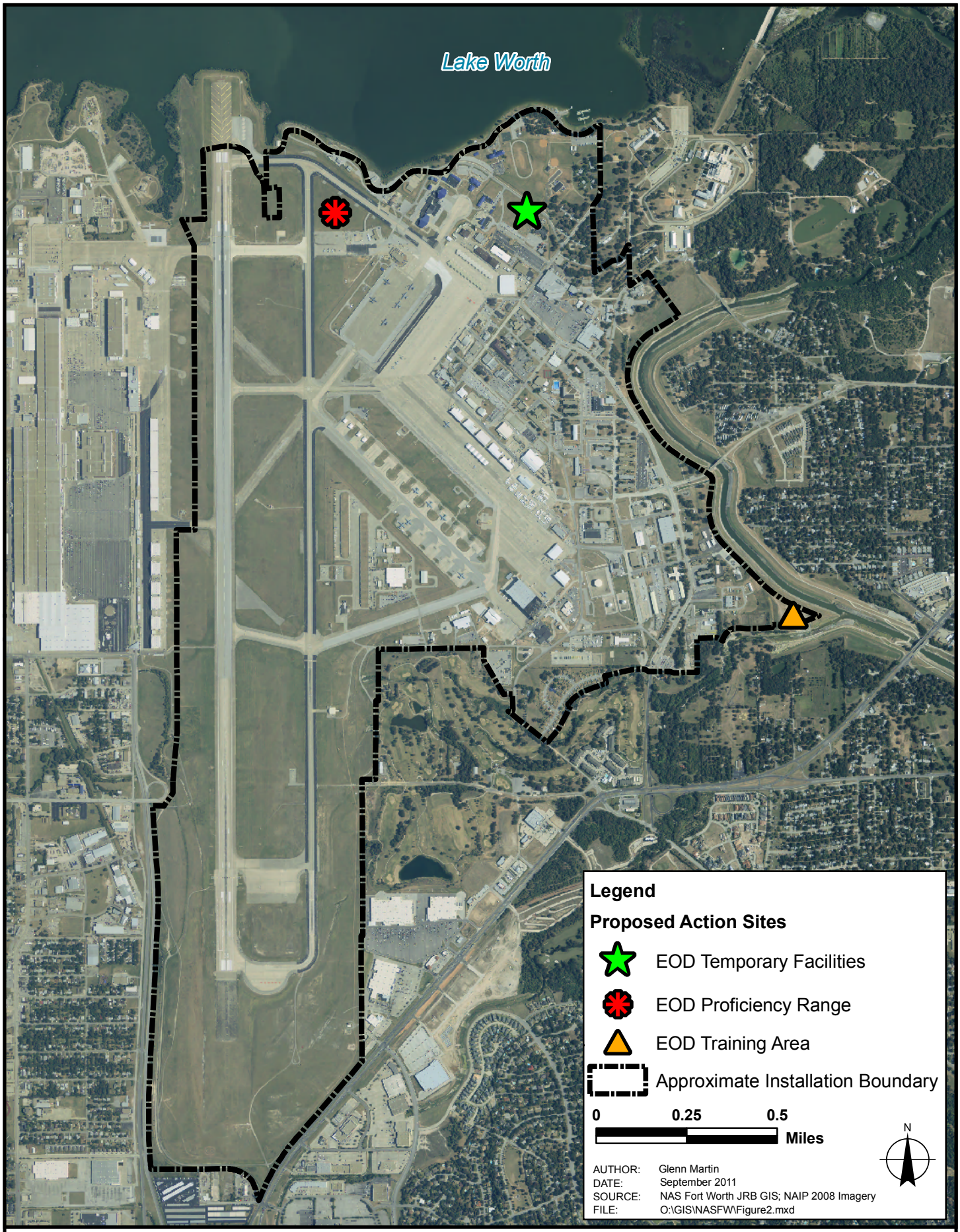

Figure 2. Proposed Action Sites

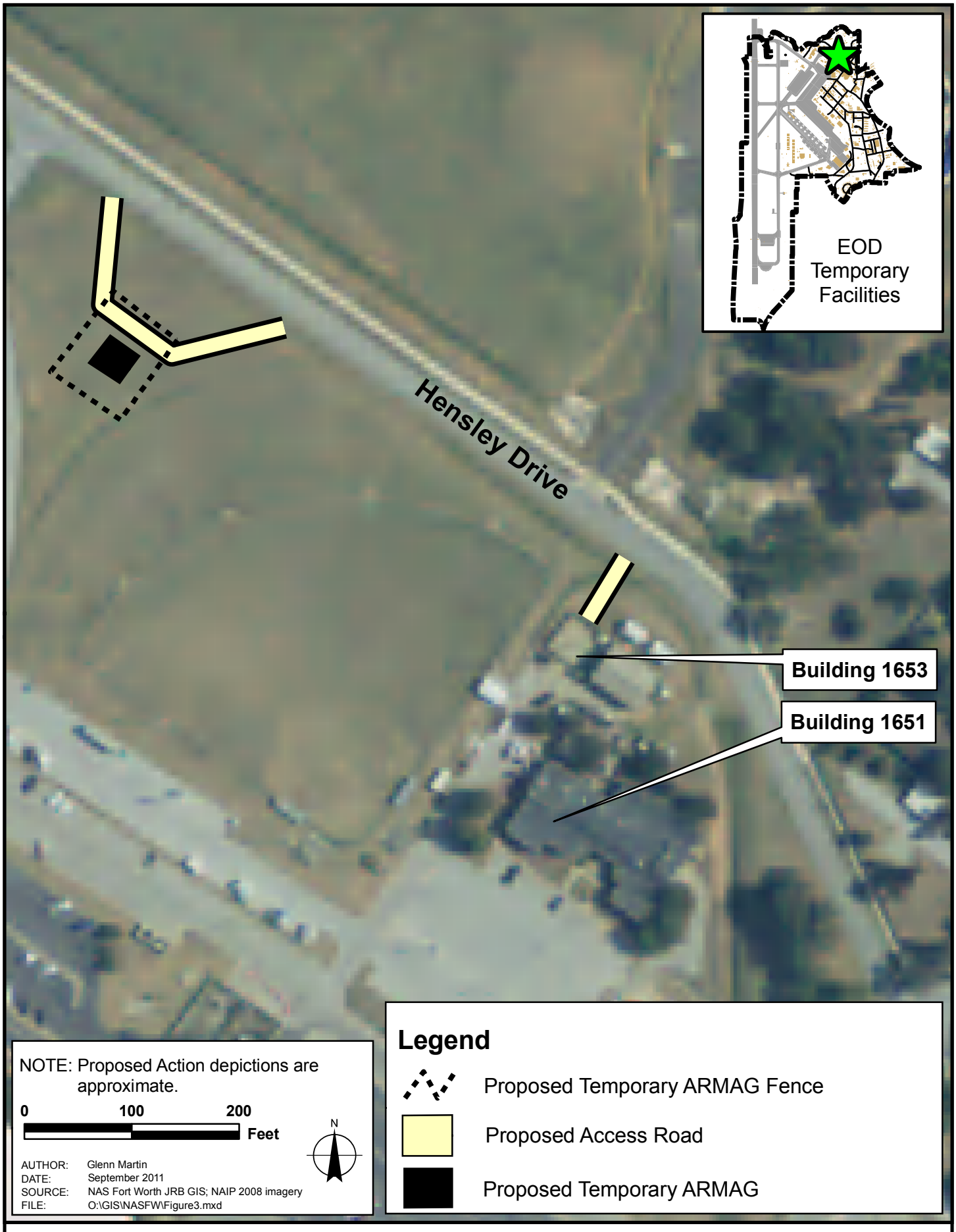

Figure 3. EOD Temporary Facilities

A concrete pad and associated security measures (fence, alarms, communication, etc.) would be constructed for temporary placement of an ARMAG on Hensley Avenue approximately 328 feet (ft) northwest of B-1653 (see **Figure 3**). The ARMAG would be required for storage of, and immediate access to, emergency response explosives. The concrete pad would be 10 ft x10 ft in plan dimension. A fence would be constructed to accommodate a 30-ft clear zone between the ARMAG and the fence and to allow for a 20-ft clear zone on the outside of the fence. There would be two vehicle access gates to allow the BSERV to drive through from Hensley Avenue. The ARMAG would have a Lightning Protection System (LPS) and Intrusion Detection System (IDS). Within the fence line there would be a security pole to accommodate security lighting, landline communications and fire extinguisher. The ARMAG would provide storage for up to 30-pounds (lbs) Net Explosive Weight (NEW) of Hazard Division (HD) 1.1 explosives.

2.2.2 EOD Proficiency Range

The EOD Proficiency Range would be located northwest of B-4160 (**Figure 4**). The Proficiency Range would be used to maintain qualifications on required demolition procedures. Barricades to control ejection of debris would be constructed with two entrances situated 180^{o} (degrees) from each other. The barricades would consist of concrete walls 1-ft thick and 8-ft high with railroad ties lined on the detonation side and dirt backfill on the non-detonation side of the walls. The railroad ties would be within 10 ft of the detonation point (interior dimension of 20 ft x 20 ft), and there would be a minimum of 2 ft of sand on the bottom of the range. A 300-ft radius clear zone around the detonation point would be required to accommodate a maximum of 2.5-lbs NEW of HD 1.1 explosives in accordance with DoD explosive safety regulations. No fragmentary munitions or shape charges would be used because of proximity to taxiways and the runway. An ARMAG would be placed on existing pavement on the south side of the Proficiency Range just outside the 300-ft clear zone radius. This ARMAG would require a LPS, but no IDS, because it would only store explosives when the range is occupied and in use. An additional area within the 300-foot clear zone would be sited for build-up of explosive initiators in accordance with DoD explosive safety regulations. A flagpole would be erected adjacent to the ARMAG and a flag would indicate when the range is in use.

Training with more than 2.5-lbs NEW would take place on the operational Proficiency Range at Dyess AFB, Texas. 301 EOD Flight personnel would travel to Dyess AFB and accompany EOD personnel assigned at that location on scheduled training exercises. It is anticipated that 301 EOD Flight training at Dyess AFB would occur no more than two times per year and involve only personnel travel. No equipment or materials would be transported from NAS Fort Worth JRB for this training.

2.2.3 EOD Practical Training Area

A fenced EOD Practical Training Area would be located southeast of B-1344 (**Figure 5**). This area would be used to accommodate practical EOD scenario training. The EOD Practical Training Area would be located at the proposed location for the future Permanent EOD Facility. The training area would encompass approximately 4 ac. The fence (1,900 ft in length and anchored to the ground) would be at least 6-ft high with barbed wire on top and would have privacy screening to preclude outside personnel from viewing EOD-specific Tactics, Techniques,

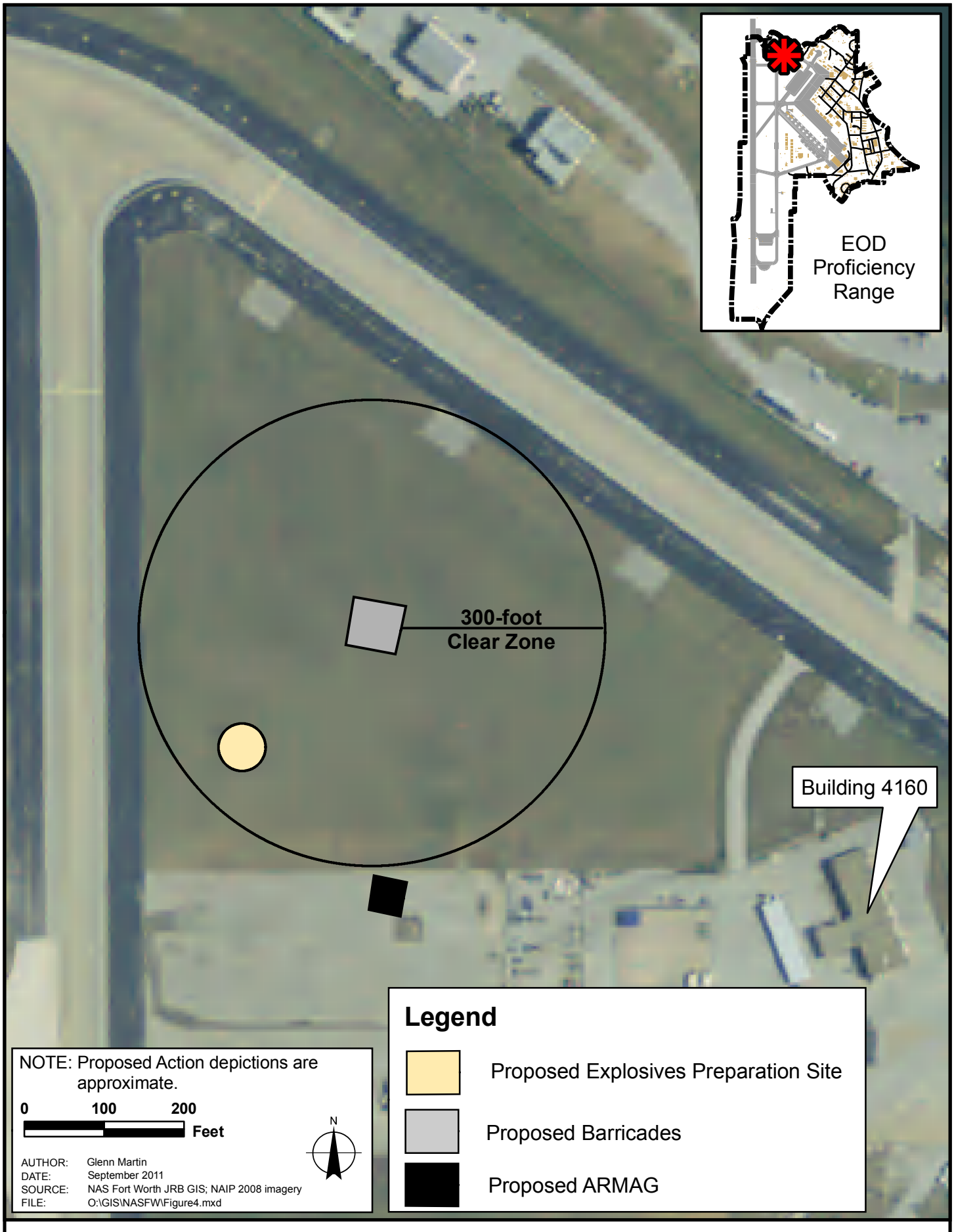

Figure 4. EOD Proficiency Range

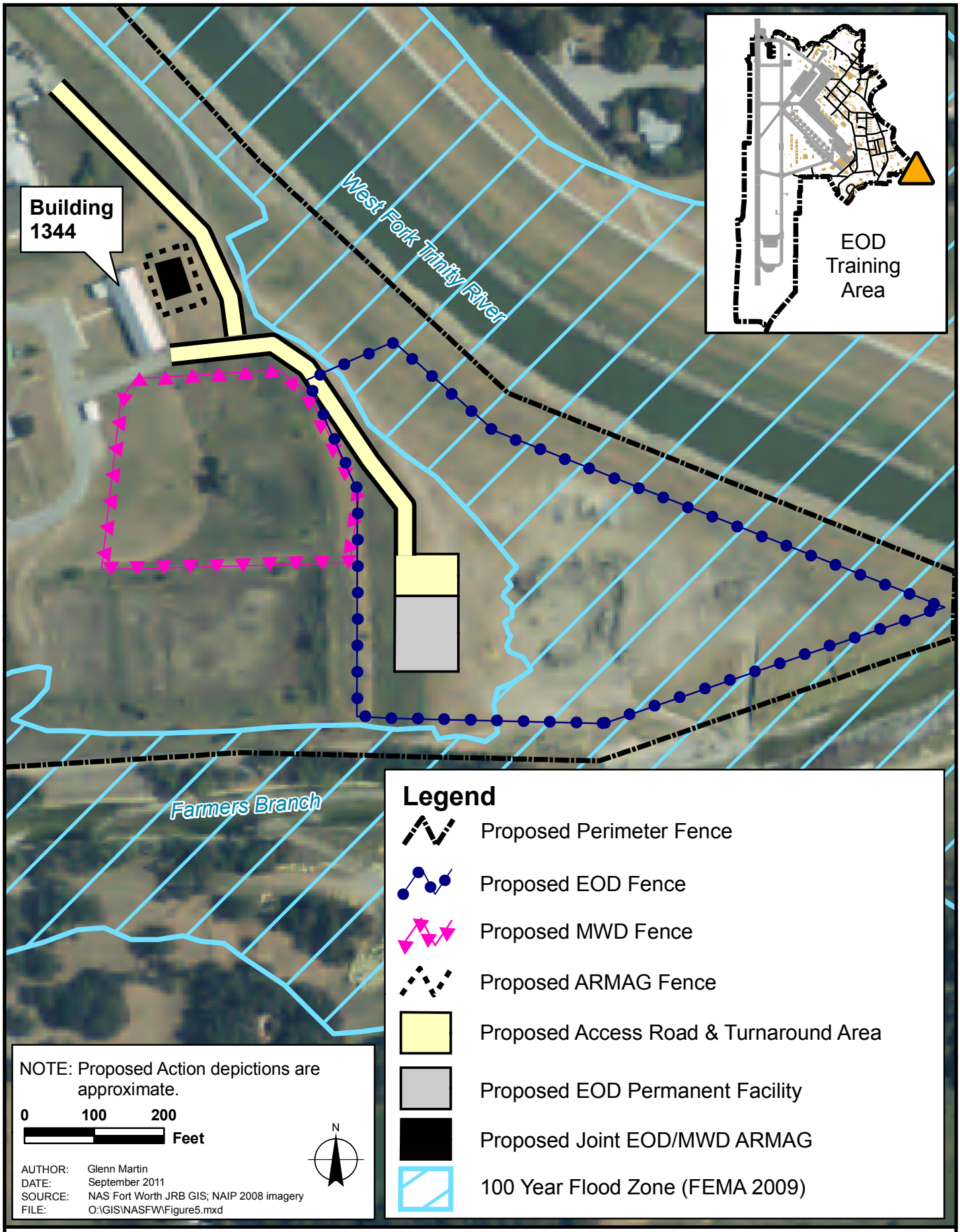

Figure 5. EOD Training Area

and Procedures (TTPs). There would be 14 ft between the training area fence and the perimeter fence to allow access space for security checks along the fence. A portion of the fence, approximately 300 ft on the northwestern side of the area, would be shared with the United States (US) Navy Military Working Dog (MWD) compound. An access road extending from the existing road adjacent to B-1344 would be constructed on the northwest side of the future Permanent EOD Facility to provide access to the facility and training area. A parking lot/open area would be constructed within the fence line to allow room for the BSERV to park and turn around. The road and turning area must support the 35,000-lb BSERV. A vehicle gate would be installed on the northeast corner along the access road. The EOD Practical Training Area would accommodate EOD training scenarios using up to 0.051-lbs NEW of HD 1.4 explosives.

A concrete pad and associated security measures would be constructed east of B-1344 for the permanent placement of the ARMAG located at the temporary EOD operations facility on Hensley Avenue. This ARMAG would provide storage of, and immediate access to, emergency response explosives after the future Permanent EOD Facility is constructed. The requirements and capabilities for this ARMAG would be the same as those for the temporary ARMAG to be constructed northwest of B-1653. The US Navy MWD section also would construct a K9 Explosive Training Aid Storage Magazine at this location in the future.

2.2.4 Permanent EOD Facility

The Permanent EOD Facility would be constructed at some future date within the confines of the EOD Practical Training Area. The Permanent EOD Facility would be constructed to meet the standards set forth in Air Force Handbook (AFH) 32-1084 and Air Force Reserve Command Handbook (AFRCH) 32-1001. The permanent facility would be approximately 11,500 square feet (ft^2), and the floor plan would provide a vehicle parking and maintenance bay, equipment storage areas, classroom, offices and break room, fitness and locker rooms, and six bedrooms (**Figure 6**). The temporary facilities would likely be used for at least ten years before Military Construction (MILCON) funding would become available for construction of the Permanent EOD Facility.

2.3 NO-ACTION ALTERNATIVE

If the Proposed Action were not implemented, the 301 FW and NAS Fort Worth JRB associate units would continue to request EOD support from Dyess AFB, Texas, and Fort Hood, Texas. EOD support from these locations requires a 3- to 4-hour response time that means personnel would be exposed to explosive hazards for a longer period of time than if the response team were located at NAS Fort Worth JRB. The No-Action Alternative also would impact mission accomplishment by preventing personnel movement within any cordoned area for an extended period of time. Further, civilian and federal law enforcement agencies in the local area would be subject to similar prolonged EOD response time for military munitions found outside of military installations in the area.

Figure 6. Conceptual Floor Plan for Proposed Permanent EOD Facility

DATE:	November 2011
SOURCE:	482 MSG/CEC, Homestead Air Reserve Base
SCALE:	Not to scale
FILE:	O:\Projects\AFRC EOD Stand-Up EA\Graphics\Figure 6

2.4 ALTERNATIVES CONSIDERED AND ELIMINATED FROM FURTHER ANALYSIS

HQ AFRC considered two alternative sites for the proposed EOD ranges, Fort Wolters, TX, and the Texas Army National Guard (TXARNG) Eagle Mountain Lake Training Site, in addition to the proposed ranges at NAS Fort Worth JRB. Subsequent evaluation determined that, although the Fort Wolters location presented two possible sites that could meet the criteria for a 5-lb NEW EOD Proficiency Range, the logistics and resource requirements would significantly increase as compared to siting EOD ranges at NAS Fort Worth JRB. Installation authorities were opposed to EOD detonations at Fort Wolters, TX. Further, the cost of site development could be more expensive due to terrain at this location, and there would be increased costs for travel to the site from NAS Fort Worth JRB. Scheduling at Fort Wolters could be impacted, since the potential range would effectively cut off large portions of areas currently being used for land navigation courses. Eagle Mountain Lake presented undeveloped areas in excess of 1,200 ac that could accommodate a 5-lb NEW EOD Proficiency Range. However, installation authorities were opposed to EOD detonations at this location, and the feasibility of developing a range was questionable because of the presence of gas wells and a local broadcasting television station located on church property opposite the main entrance to the Eagle Mountain Lake Training Site. As these alternatives were determined to be unsatisfactory, no further analysis or consideration is included in this EA.

Based on these considerations, it was determined that NAS Fort Worth JRB was the most likely location that would effectively support an EOD Proficiency Range. The site proposed for development was the grassy area located between Taxiway A 194, Parallel Taxiway 197 and B-4160. This site would support a 2.5-lb NEW Proficiency Range, although it would not accommodate a 5-lb NEW range because of proximity to the taxiways. Even at reduced training capacity, this location would significantly reduce logistics and resource requirements as compared to the other alternatives, and siting the range on NAS Fort Worth JRB would provide an on-station location for emergency disposal if necessary.

2.5 PREFERRED ALTERNATIVE AND PROPOSED ACTION

Of the three alternative sites considered, NAS Fort Worth JRB was determined to be the optimal site for the EOD Proficiency Range and is the Proposed Action considered in detail in this EA along with the No-Action Alternative. The detailed analysis considers the stand up and operation of the 301 EOD Flight at NAS Fort Worth JRB. Limited training events for the 301 EOD Flight personnel (up to two times per year) at capacity greater than 2.5-lb NEW would occur with personnel assigned at Dyess AFB on its established, operational Proficiency Range. This limited training on an active range is not addressed in the detailed analysis because of the minimal scope and intensity of this activity.

2.6 COMPARISON OF ALTERNATIVES

Proposed Action construction activities would have negligible or minor effects on storm water, air quality, solid waste, hazardous materials and waste, and insignificant adverse effects on the noise environment. EOD Flight operations would have negligible or minor

effects on surface water quality, floodplains, storm water, air quality, solid waste, hazardous materials and waste, and insignificant adverse impacts on the noise environment, as well as mixed effects on safety (**Table 2-1**). There would be insignificant beneficial effects on safety from the local presence of the EOD Flight at NAS Fort Worth JRB, and insignificant adverse effects associated with the added risk of transportation, storage, and handling of explosives, and the need to establish clear zones around training areas in accordance with Air Force requirements. The No-Action Alternative would have an insignificant adverse effect on safety, but would not accomplish the stated purpose and need for the Proposed Action.

Table 2-1. Comparison of Alternatives Receiving Detailed Evaluation

		Proposed Action		**No-Action Alternative**
Phase of Action (C = Construction; O = Operation)		**C**	**O**	**Not Applicable**
Environmental Component		+ = Beneficial Effect; --- = Insignificant Adverse Effect; X = Adverse Effect; O = No Effect		
Physical Environment	Surface Waters	O	---	O
	Floodplains and Wetlands	---	---	O
	Storm Water	---	---	O
Air Quality		---	---	O
Waste Management & Hazardous Materials	Solid Waste	---	---	O
	Hazardous Materials and Waste	---	---	O
Noise Environment		---	---	O
Socioeconomic Environment		+	+	O
Safety		O	+ / ---	---
Cumulative Impacts		---	---	O

NOTE: Additional environmental components (i.e., soils, groundwater, biological resources, cultural resources, and infrastructure) were considered and eliminated from detailed analysis (see **Section 3.1**)

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 ENVIRONMENTAL COMPONENTS CONSIDERED AND ELIMINATED FROM DETAILED ANALYSIS

Environmental components considered and eliminated from detailed analysis include: topography, soils; groundwater; biological resources; cultural resources; and infrastructure. Brief descriptions of these environmental components and why they were eliminated from further analysis are provided below.

3.1.1 Topography

NAS Fort Worth JRB is located within the Grand Prairie section of the central lowlands of north central Texas (NAS Fort Worth JRB, 2004a). The surrounding topography is characterized by broad terraces gently sloping toward the east and interrupted by meandering streams and rivers and westward-facing escarpments. Elevations on the installation range from 690 ft to 550 ft and generally slope downward from west to east. Topography at the proposed Proficiency Range varies by only 5 ft and by only 3 ft at the proposed Practical Training Area. Only minor grading would be necessary for site development. To the maximum extent practicable, affected areas would be returned to existing grade following construction, and bare soil would be immediately stabilized with vegetation to prevent erosion. Therefore, the Proposed Action would not adversely affect topography on, or in the vicinity of, NAS Fort Worth JRB.

3.1.2 Soils

Soil at each of the three Proposed Action Sites has been subjected to extensive alteration in the past, and mapping units consist entirely of various Urban Land Complexes (NAS Fort Worth JRB, 2004a). Therefore, the Proposed Action would not adversely affect soil resources on, or in the vicinity of, NAS Fort Worth JRB.

3.1.3 Groundwater

NAS Fort Worth JRB is underlain by five major hydrogeologic units described as: an upper zone of perched water in alluvial terrace deposits; an aquitard in the Goodland, Limestone, and Walnut Formations; an aquifer in the Paluxy Formation; an aquitard in the Glen Rose Formation; and an aquifer in the Twin Mountain Formation (NAS Fort Worth JRB, 2004a). No active groundwater supply wells are located on NAS Fort Worth JRB. All of the water used on the installation is acquired from the City of Fort Worth. The Proposed Action would not adversely affect groundwater on, or in the vicinity of, NAS Fort Worth JRB, because construction would not occur at depths that would contact groundwater and operational activities would be restricted to the ground surface.

3.1.4 Biological Resources

The biological environment at each of the three Proposed Action Sites consists entirely of herbaceous, frequently mowed, lawn areas (NAS Fort Worth JRB, 2004a). These areas provide minimal habitat value for native species of flora and fauna. No rare, threatened, or endangered species occur on NAS Fort Worth JRB. Given the existing, highly managed condition of the

Proposed Action Sites, the Proposed Action would not adversely affect biological resources on, or in the vicinity of, NAS Fort Worth JRB.

3.1.5 Cultural Resources

NAS Fort Worth JRB contains two National Register of Historic Places (NRHP)-eligible buildings (B-247 and B-4175) and no NRHP-eligible or otherwise significant archeological sites (NAS Fort Worth JRB, 2004b). The closest distance between any Proposed Action Site and any significant cultural resource would be approximately 900 ft between the Proposed EOD Proficiency Range and B-4175. During detonations at the Proposed Proficiency Range, B-4175 would be subjected to elevated peak sound pressure levels (see **Section 3.5.1.3**). NAS Fort Worth JRB would take appropriate actions (e.g., structural stabilization, window replacement, or noise management measures), if necessary, to avoid significant adverse impacts to B-4175. The Proposed Action would not adversely impact other cultural resources on, or in the vicinity of, NAS Fort Worth JRB.

3.1.6 Infrastructure

The infrastructure systems at NAS Fort Worth JRB support a total workforce of 11,337 (4,609 active military or civilian and 6,728 reservists; NAS Fort Worth JRB, 2011). As a reserve base, the working population and associated infrastructure use is relatively low during the typical work week (Monday – Friday) as compared to drill weekends when reserve components arrive to participate in routine training.

3.1.6.1 Utilities

Utilities available on the installation include: potable water; sanitary sewer; natural gas; electricity; and communications. The Proposed Action would result in the addition of only 14 personnel (6 AGR and 8 TR) which, when compared to the existing workforce and utility use and capacity at NAS Fort Worth JRB, would represent a negligible change in utility demand.

3.1.6.2 Traffic

Multiple traffic/congestion and parking issues have been identified on the installation and are primarily associated with the use of privately owned vehicles during training weekends (NAS Fort Worth JRB, 2010). Since the Proposed Action would result in the addition of only 14 personnel (6 AGR and 8 TR), there would be a negligible change in traffic.

3.2 PHYSICAL ENVIRONMENT

3.2.1 Surface Waters

3.2.1.1 Existing Conditions

Surface water (streams, tributaries, lakes or other impoundments) on or adjacent to NAS Fort Worth JRB includes Lake Worth, Kings Branch, Farmers Branch, and the West Fork of the Trinity River (NAS Forth Worth JRB, 2004a). Lake Worth is a man-made impoundment that covers approximately 3,558 ac and forms the northern boundary of the installation. Water quality concerns in Lake Worth include: polychlorinated biphenols (PCBs); silt; and copper. Currently,

the consumption of fish from Lake Worth is banned. The discharge from the Lake Worth Dam forms the West Fork of the Trinity River which partially bounds the installation to the east. The segment of the river adjacent to the base is listed on the State of Texas Clean Water Act Section 303 (d) List of Threatened and Impaired Water Bodies. Downstream from the installation this segment of the river has been found to have high bacteria concentrations and elevated levels of chlordane in fish tissue. The consumption of fish from this segment of the river is banned. Farmers Branch is an intermittent stream that begins west of the installation and conveys water beneath the airfield. Farmers Branch joins the West Fork of the Trinity River immediately east of the installation. Aquatic diversity in Farmers Branch is generally low due to low flow and periodic dry-down. King's Branch originates south of the installation and joins Farmers Branch just prior to its confluence with the West Fork of the Trinity River.

EOD Temporary Operations Facilities: This site is located approximately 1,100 ft south of Lake Worth and more than 2,500 ft west of the West Fork of the Trinity River. Existing on-site drainage ditches convey water into the installation's drainage network, and water from the site is eventually discharged into the West Fork of the Trinity River.

EOD Proficiency Range: This site is located approximately 950 ft south of Lake Worth and more than 5,000 ft west of the West Fork of the Trinity River. No drainage conveyances are present on the site; storm water would follow site topography and eventually drain to Lake Worth.

EOD Practical Training Area: This site is located more than 7,500 ft south of Lake Worth and is positioned near the confluence of the West Fork of the Trinity River and Farmers Branch. The site directly abuts the West Fork of the Trinity River to the east and Farmers Branch to the south. No drainage conveyances are present on the site; storm water would follow site topography and drain to the West Fork of the Trinity River or Farmers Branch.

3.2.1.2 Consequences of the No-Action Alternative

Under the No-Action Alternative, the Proposed Action would not be implemented and existing surface waters and water quality on, or in the vicinity of, NAS Fort Worth JRB would remain as described in **Section 3.2.2.1**.

3.2.1.3 Consequences of the Proposed Action

Implementation of the Proposed Action would result in negligible or minor effects on surface water quality on, or in the vicinity of, NAS Fort Worth JRB. All construction activities would comply with appropriate local, state, and federal regulations and permits, including an approved Erosion, Sediment, and Pollution Control Plan (ESPCP) and NAS Fort Worth JRB's *Stormwater Pollution Prevention Plan* (SPPP; NAS Fort Worth JRB, 2007). As necessary, best management practices (BMPs; e.g., construction schedules, stabilization measures, structural practices, sediment basins) would be used to minimize potential adverse impacts to surface water quality (see **Section 3.2.4.3**). When a detonation is complete the detonation point is inspected to ensure that all explosives were consumed. If not consumed, explosives are collected and another detonation is performed to clean up all explosives. The detonation area also is policed for any

debris (torn sandbags, etc.) or empty explosive containers (50 caliber cartridge casings, 12 gauge shotgun shells, etc.) which are then removed and appropriately disposed.

Little scientific data is available on the transport and fate of, or the environmental contamination risk posed by, explosive materials or their residues (Pennington et al., 2001). The data available were largely collected from explosives manufacturing facilities or from heavy-use testing and training ranges where the frequency of activities and the quantities of explosives used greatly exceed those expected from the Proposed Action. Pennington et al. (2001) reported minor contamination of surface water seeps (located on-site) under these heavy-use scenarios, although the source of this contamination was unclear. There is no surface water on either of the proposed EOD sites; there would be no direct discharge of storm water to surface water from either of the Proposed Action Sites; and based on the relatively small quantities of explosives to be used and the relatively small number of detonations that would occur as part of the Proposed Action (approximately 120 detonations per year totaling 300 lbs of explosive at the Proficiency Range and 208 detonations per year totaling 10.6 lbs of explosive at the Practical Training Area), negligible adverse effect on surface water quality from the settling of minor air particulate emissions (dust) would be expected. Any trace amount of explosive residue from the detonation would be contained within the immediate detonation area.

3.2.2 Floodplains and Wetlands

3.2.2.1 Existing Conditions

Relatively small portions of the base are located within the 100-year and 500-year flood zones (FEMA, 2009). Specifically, low-lying areas of the installation located immediately adjacent to Lake Worth or the West Fork of the Trinity River and a central portion of the airfield located in the Farmers Branch drainage. Only one regulated wetland is present on NAS Fort Worth JRB, and it is located on the eastern boundary of the installation near the intersection of Military Parkway and Desert Storm Road, immediately adjacent to the West Fork of the Trinity River and approximately 4,500 ft upstream from the proposed EOD Practical Training Area.

EOD Temporary Operations Facilities: No flood zones or wetlands are located on this site. The nearest flood zone is approximately 650 ft northeast of the site and is associated with Lake Worth.

EOD Proficiency Range: No flood zones or wetlands are located on this site. The nearest flood zone is approximately 500 ft north of the site and is associated with Lake Worth.

EOD Practical Training Area: No wetlands are located on this site. However, portions of this site are located within the 100-year flood zone associated with the West Fork of the Trinity River and Farmers Branch.

3.2.2.2 Consequences of the No-Action Alternative

Under the No-Action Alternative, there would be no potential effect on existing flood zones or wetlands on, or in the vicinity of, NAS Fort Worth JRB because the Proposed Action would not occur.

3.2.2.3 Consequences of the Proposed Action

EOD Temporary Operations Facilities and EOD Proficiency Range: Implementation of the Proposed Action would not impact floodplains or wetlands. As described in **Section 3.2.4.3**, the Proposed Action would result in a minute increase in impermeable surfaces at these locations which would lead to a negligible increase in the volume of storm water created at these sites. The potential increase in storm water would be minor and would not significantly affect receiving bodies of water or floodplains.

EOD Practical Training Area: Implementation of the Proposed Action would result in a negligible or minor effect on floodplains. A portion of this site is located within the 100-year flood zone. However, no buildings or impermeable surfaces would be constructed within the 100-year flood zone. Construction within the 100-year flood zone would be limited to the EOD security fence, the new perimeter fence for the installation, and temporary structures to be used during EOD training operations. Operational activities would occur within the 100-year flood zone, but would be limited in frequency and duration and would not adversely impact the flood zone. As described in **Section 3.2.4.3**, the Proposed Action would result in a minor increase in impermeable surfaces at this location which would lead to a negligible increase in the volume of storm water runoff. The negligible increase in storm water runoff would not significantly affect receiving bodies of water or floodplains.

3.2.3 Storm Water

3.2.3.1 Existing Conditions

All storm water generated on NAS Fort Worth JRB eventually discharges to the West Fork of the Trinity River. Storm water from the northernmost portion of the installation flows into Lake Worth which then forms the West Fork of the Trinity River. Storm water from the central-northern portion of the installation generally discharges directly to the West Fork of the Trinity River or to Farmers Branch. Storm water generated on the southern portion of the installation discharges to Farmers Branch or to Kings Branch.

EOD Temporary Operations Facilities: Precipitation falling on this site either infiltrates into site soils or is conveyed through the installation's storm water drainage system and discharged directly into the West Fork of the Trinity River.

EOD Proficiency Range: Precipitation falling on this site either infiltrates into site soils or follows the topography downslope to Lake Worth.

EOD Practical Training Area: Precipitation falling on this site either infiltrates into site soils or follows the topography downslope to the West Fork of the Trinity River or Farmers Branch.

3.2.3.2 Consequences of the No-Action Alternative

Under the No-Action Alternative, storm water generation, conveyance, and discharge occurring on, or in the vicinity of, NAS Fort Worth JRB would remain unchanged, therefore no additional impacts would occur because the Proposed Action would not occur.

3.2.3.3 Consequences of the Proposed Action

EOD Temporary Operations Facilities: Implementation of the Proposed Action would result in a negligible increase in storm water runoff. All construction activities would comply with appropriate local, state, and federal regulations and permits, as well as an approved ESPCP and NAS Fort Worth JRB's SPPP (NAS Fort Worth JRB, 2007). In addition, the Energy Independence and Security Act of 2007 (EISA) requires that federal facility projects with a footprint exceeding 5,000 ft^2, including all horizontal hard surfaces, must "*maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property with regard to the temperature, rate, volume, and duration of flow*." The Proposed Action would include three individual projects at this location: temporary use of space in Building 1651; renovation of Building 1653 to provide a temporary facility to house EOD operations; and construction of a concrete pad and security measures for the temporary placement of an ARMAG. The combined footprint of these projects would not exceed the 5,000 ft^2 threshold as specified in the EISA and, therefore, these projects would be exempt from the associated storm water management requirement. Temporary and permanent BMPs would be used, as necessary, to control discharges of sediment or other nonpoint source water pollutants from these areas. Implementation of the Proposed Action would result in a minute increase in impermeable surfaces and a negligible increase in the volume of storm water runoff generated at this site. Storm water runoff would continue to infiltrate into site soils or be conveyed through the installation's storm water drainage system and discharged directly into the West Fork of the Trinity River.

EOD Proficiency Range: Implementation of the Proposed Action would result in a negligible or minor effect on storm water quality and volume. All construction activities would comply with appropriate local, state, and federal regulations and permits, as well as an approved ESPCP and NAS Fort Worth JRB's SPPP (NAS Fort Worth JRB, 2007). The Proposed Action at this location would not exceed the 5,000 ft^2 threshold specified in the EISA and would be exempt from the associated storm water management requirements. Temporary and permanent BMPs would be used, as necessary, to minimize discharges of sediment or other nonpoint source water pollutants from these areas. Implementation of the Proposed Action at this site would result in a minute increase in impermeable surfaces and a negligible increase in the volume of storm water runoff generated, and storm water would continue to infiltrate into site soils or follow the topography downslope to Lake Worth.

EOD Practical Training Area: Implementation of the Proposed Action would result in a negligible or minor effect on storm water quality and volume at this site. All construction activities would comply with appropriate local, state, and federal regulations and permits, an approved ESPCP, and NAS Fort Worth JRB's SPPP (NAS Fort Worth JRB, 2007). The Proposed Action would include three individual projects at this location: construction of the fenced EOD Practical Training Area; construction of a concrete pad and security measures for the permanent placement of an ARMAG; and future construction of a permanent EOD Facility. Of these projects, only the future construction of the permanent EOD Facility would exceed the 5,000 ft^2 threshold as specified in the EISA. The design of the permanent EOD Facility would comply with the EISA storm water management requirements as practicable. The building would

be planned using low impact development (LID) techniques to achieve an overall design objective of maintaining predevelopment hydrology and preventing any net increase in storm water runoff to the maximum extent technically feasible. In addition, temporary and permanent BMPs would be used, as necessary, to control potential discharges of sediment or other nonpoint source water pollutants from these areas. Implementation of the Proposed Action would result in a minor increase in impermeable surfaces and a negligible increase in the volume of storm water runoff generated at this site. Storm water generated from the permanent EOD Facility would be managed as described above while storm water runoff generated from the EOD Practical Training Area or the ARMAG would continue to infiltrate into site soils or follow the topography downslope to the West Fork of the Trinity River or Farmers Branch.

3.3 AIR QUALITY

3.3.1 Existing Conditions

3.3.1.1 Regional Air Quality

In accordance with the Clean Air Act (CAA), the United States Environmental Protection Agency (USEPA) has established Primary and Secondary National Ambient Air Quality Standards (NAAQS) for six criteria pollutants (**Table 3-1**), and the State of Texas has adopted these standards. A geographic area that meets a given standard is designated as an "attainment area" for that standard. Conversely, an area that exceeds a given standard is designated as a "non-attainment area." Non-attainment areas are further classified based on the degree to which the specific standard is exceeded. The Dallas-Fort Worth region and Tarrant County, which includes NAS Fort Worth JRB, is classified as a serious non-attainment area for 8-hour ozone (O_3) per the NAAQS (USEPA, 2011a). Tarrant County is in attainment for all other NAAQS criteria pollutants as shown in Table 3-1.

Table 3-1. USEPA Standards and Observed Concentrations of NAAQS Criteria Pollutants in Tarrant County, Texas

Pollutant	USEPA Primary Standard	USEPA Secondary Standard	Tarrant County 2008
CO – 8-hour Average[1]	9 ppm	None	1.0 ppm
CO – 1-hour Average[1]	35 ppm	None	1.7 ppm
Pb – Rolling 3-month Average[2]	0.15 µg/m^3	Same as primary	Not Available
NO_2 – Annual Mean	0. 053 ppm	Same as Primary	0.013 ppm
NO_2 – 1-hour[3,4]	100 ppb	None	13 ppb
PM_{10} – 24-hour Average[5]	150 µg/m^3	Same as primary	29 µg/m^3
$PM_{2.5}$ – Annual Mean[6]	15 µg/m^3	Same as primary	11.34 µg/m^3
$PM_{2.5}$ – 24-hour Average[7]	35 µg/m^3	Same as primary	30.9 µg/m^3
O_3 – 8-hour Average (2008	0.075 ppm	Same as primary	0.085 ppm

Standard)[8]			
O_3 – 8-hour Average (1997 Standard)[9]	0.08 ppm	Same as primary	0.085 ppm
O_3 – 1-hour Average[10]	0.12 ppm	Same as primary	0.110 ppm
SO_2 – Annual Mean[11]	0.03 ppm	0.5 ppm – 3-hour Average[1]	Not Available
SO_2 – 24-hour Average[1,11]	0.14 ppm		Not Available
SO_2 – 1-hour Average[12]	75 ppb	None	Not Available

Source: USEPA, 2008; 2011b

[1]Not to be exceeded more than once per year.

[2]Final rule signed 15 October 2008. The 1978 lead standard (1.5 μg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated non-attainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[3]To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb (effective 22 January 2010).

[4]Not to be exceeded more than once per year on average over 3 years.

[5]To attain this standard, the 3-year average of the weighted annual mean PM2.5 concentrations from single or multiple community-oriented monitors must not exceed 15.0 μg/m^3.

[6]To attain this standard, the 3-year average of the 98th percentile of 24-hour concentrations at each population-oriented monitor within an area must not exceed 35 μg/m^3 (effective 17 December 2006).

[7]To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.075 ppm (effective 27 May 2008).

[8]To attain this standard, the 3-year average of the fourth-highest daily maximum 8-hour average ozone concentrations measured at each monitor within an area over each year must not exceed 0.08 ppm. The 1997 standard—and the implementation rules for that standard—will remain in place for implementation purposes as USEPA undertakes rulemaking to address the transition from the 1997 O_3 standard to the 2008 O_3 standard. USEPA is in the process of reconsidering these standards (set in March 2008).

[9]USEPA revoked the 1-hour O_3 standard in all areas, although some areas have continuing obligations under that standard ("anti-backsliding"). The standard is attained when the expected number of days per calendar year with maximum hourly average concentration above 0.12 ppm is ≤ 1.

[10]The 1971 SO_2 standards remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated non-attainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[11]Final rule signed 2 June 2010. To attain this standard, the 3-year average of the 99th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 75 ppb.

CO – carbon monoxide
Pb - lead
NO_2 – nitrogen dioxide
SO_2 – sulfur dioxide
PM – particulate matter
ppm – parts per million
μg/m^3 – micrograms per cubic meter
ppb – parts per billion

3.3.1.2 Air Emission Sources

NAS Fort Worth JRB is not considered to be a "major source" per (30 Texas Administrative Code [TAC] 122.10) and therefore does not require a Title V operating permit. However, NAS Fort Worth JRB is classified as an "area source" under the National Emission Standards for Hazardous Air Pollutants (NESHAP; 40 CFR 63) and is subject to appropriate Maximum

Achievable Control Technology (MACT) standards. In order to meet CAA requirements, NAS Fort Worth JRB maintains an inventory of actual air emissions (**Table 3-2**; NAS Fort Worth JRB, 2011a) which is submitted to the Texas Commission of Environmental Quality (TCEQ) annually. Stationary sources of air emissions at the installation include internal combustion engines, boiler and heaters, surface coating operations, processes using organic solvents, liquid fuel storage tanks, abrasive blasting operations, and other miscellaneous activities.

Table 3-2. Calendar Year 2010 Actual Emission Estimates for NAAQS Criteria Pollutants at NAS Fort Worth JRB.

2010 Annual Emission Estimates in Tons Per Year						
CO	**NO_x**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**	**VOCs[1]**	**Pb**
9.24	23.91	2.00	5.61	5.37	10.09	0

Source: NAS Fort Worth JRB, 2011a

[1]VOCs in the air react with nitrogen oxides and sunlight to form O_3.

NO_x – nitrogen oxides

VOC – Volatile Organic Compounds

3.3.1.3 Greenhouse Gas

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere and are generated by both natural processes and human activities. GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), O_3, fluorinated gases (FGs), and halocarbons (HCs). Combustion of fossil fuels and biomass can release CO_2, CH_4, and N_2O, the three major GHGs. Chemical reactions among O_3 precursors in the atmosphere produce O_3; these precursors come in part from fuel combustion. FGs are emitted from a variety of industrial processes. Common sources of HCs include refrigerants, propellants, and industrial solvents.

By statutes, EOs, and agency policies, the Federal Government is committed to the goals of energy conservation, reducing energy use, eliminating or reducing GHG emissions, and promoting the deployment of renewable energy technologies that are cleaner and more efficient. When a proposed federal action potentially affects these goals, information on GHG emissions that is useful and relevant to the decision is used for deciding among alternative actions (CEQ, 2010). The reference point of 25,000 metric tons of direct CO_2-equivalent (CO_2-e) GHG emissions provides a minimum level that would require consideration of GHG emissions in NEPA documents.

3.3.2 Consequences of the No-Action Alternative

Under the No-Action Alternative, there would be no potential effect on air quality on, and in the vicinity of, NAS Fort Worth JRB because the Proposed Action would not occur.

3.3.3 Consequences of the Proposed Action

Regulatory Review and Air Permit Requirements: Potential air emissions resulting from the Proposed Action have been evaluated based on the CAA as amended. The effects of an action are generally considered significant if they increase ambient air pollutant concentrations above

NAAQS, contribute to an existing violation of NAAQS, or interfere with or delay the attainment of NAAQS. In addition, the Proposed Action would be required to comply with various air permits and regulations, as applicable. Based on the nature of the Proposed Action, it would not be subject to regulation under NESHAP or New Source Performance Standards. However, the Proposed Action potentially would be subject to the following regulations:

- **General Conformity Rule** – The General Conformity Rule (40 CFR 93.153) requires that federal actions in non-attainment or maintenance areas do not interfere with a state's timely attainment of the NAAQS. Tarrant County is currently classified as a serious non-attainment area for O_3, and, as such, the Proposed Action is subject to the General Conformity Rule. However, federal actions that would not exceed specified *de minimis* emissions thresholds for criteria pollutants are not subject to the requirement of conformity determination. The *de minimis* emission threshold for O_3 in serious non-attainment areas is 50 tons per year as VOCs or NO_x. Based on the air emissions analysis detailed below, the Proposed Action would not exceed *de minimis* thresholds.

- **New Source Review** – New Source Review (NSR) includes three types of permit requirements: Prevention of Significant Deterioration (PSD); Non-attainment NSR; and minor NSR permits. PSD permits only apply to new major sources or a major source making a major modification within a NAAQS attainment area. Non-attainment NSR only applies to new major sources or a major source making a major modification within a NAAQS non-attainment area. Minor NSR permits are designed to prevent the construction of emission sources that would interfere with attainment or maintenance of NAAQS and are administered by individual states as part of the State Implementation Plan. TCEQ maintains a list of facilities/sources considered to be *de minimis* and thus exempt from NSR (30 TAC 116.119). Based on the air emissions analysis detailed below, it is expected that all aspects of the Proposed Action would be classified as *de minimis* and would therefore be exempt from the NSR preconstruction requirement.

EOD Temporary Operations Facilities: Implementation of the Proposed Action at this location would result in temporary insignificant adverse impacts to local air quality. During the demolition/construction phase of the Proposed Action, the operation of heavy equipment and construction employee traffic would result in minor emissions of CO, FGs, and NO_x. BMPs would be used as appropriate to control fugitive dust emissions during demolition/construction. Demolition/construction-related emissions would be limited in quantity and duration. The Proposed Action would also result in minor emissions from personal vehicles, operation of the BSERV, and comfort air conditioning systems during operation of the facility. Comfort air conditioning systems are considered *de minimis* under 30 TAC 116.119, therefore the EOD Temporary Operations Facility would not be subject to NSR. EOD operations and associated air emissions at this location would be relocated to the Permanent EOD Facility following its completion.

EOD Proficiency Range: Implementation of the Proposed Action at this location would result in insignificant adverse impacts to local air quality. During construction, the operation of heavy equipment and construction employee traffic would result in minor emissions of CO, FGs, and

NO_x. BMPs would be used as appropriate to control fugitive dust emissions during construction, and construction-related emissions would be limited in quantity and duration and would be insignificant. EOD operations at the Proficiency Range would produce minor air emissions. It is expected that the EOD Proficiency Range would be categorized as "Educational Laboritories/Training" under 30 TAC 116.119 and would not be subject to NSR. The range would be used approximately one day per month (usually the first Saturday of each month) and between 1 and 10 detonations would occur during training days. The explosive materials commonly used at the range would include: C4; 2,4,6-trinitrotoluene (TNT); Semtex; detonating cord; deta sheet; thermite; smokeless powder; and photoflash powder.

The USEPA has quantified the air emissions commonly associated with specific industries and activities including EOD training operations (USEPA, 1995), although the agency has not calculated air emissions for each of the explosive materials expected to be detonated at the range. Further, the explosive materials and quantities detonated would likely vary among detonations and training days. The air emissions analysis for the EOD Proficiency Range considered emissions associated with detonating C4 (Department of Defense Identification Code [DODIC] M023), TNT (DODIC M032), Type 1 Detonating Cord (DODIC M456), and M4A2 Propelling Charge (DODIC D451) which primarily consists of smokeless powder (**Table 3-3**), and assumed that equal quantities of these materials would be used. The primary emissions from operations at the EOD Proficiency Range would be CO_2 and CO (see **Table 3-3**). Other NAAQS criteria pollutants, GHGs, and toxic chemicals (i.e., those chemicals regulated under Section 313 of the Emergency Planning and Community Right-to-Know Act [EPCRA]) would be emitted at low levels (USEPA, 1995) and would not approach the applicable *de minimis* thresholds.

Table 3-3. Total Estimated Annual Air Emissions from the Proposed EOD Proficiency Range

	Pounds of Pollutant Emitted Annually[1]				
Pollutant	**C4**	**TNT**	**Detonating Cord**	**Smokeless Powder**	**Total**
CO	1.58	0.36	3.53	33.75	39.22
Pb	0.01	0.02	0.01	0.02	0.06
NO_x	0.47	0.96	0.53	0.44	2.40
PM_{10}	1.58	1.88	12.00	1.80	17.26
$PM_{2.5}$	1.13	1.05	0.83	0.75	3.76
VOC[2]	0.02	0.00	0.08	0.00	0.10
SO_2	0.01	2.40	1.13	NA	3.54
CO_2	47.25	90.00	375.00	26.25	538.50
CH_4	0.10	NA	NA	0.20	0.30

Source: USEPA, 1995

[1]Estimate assumes 10 detonations of 2.5 lbs NEW per month and that each detonation contains equal quantities of each explosive material analyzed. This equates to 300 lbs total NEW or 75 lbs NEW of each explosive material detonated per year.
[2]VOCs in the air react with nitrogen oxides and sunlight to form O_3. Values were obtained by summing emissions factors for multiple common VOCs presented in USEPA (1995).
NA – Not Available

EOD Practical Training Area: Implementation of the Proposed Action at this location would result in insignificant adverse impacts to local air quality. During the construction, operation of heavy equipment and construction employee traffic would result in minor emissions of CO, FGs, and NO_x. BMPs would be used as appropriate to control fugitive dust emissions during construction, and construction-related emissions would be limited in quantity and duration and would be insignificant. EOD operations at the Practical Training Area would produce minor air emissions and are expected to be categorized as "Educational Laboratories/Training" under 30 TAC 116.119 and not subject to NSR. It is anticipated that the Training Area would be used approximately two days per week, and between one and two detonations would occur during training days. Each detonation would use a maximum of 0.051lbs NEW explosive material. Smokeless powder is the only explosive material expected to be used at the Practical Training Area. Assuming two training days per week, two detonations per training day, and 0.051 lbs NEW of smokeless powder per detonation, a total of 10.61 lbs of smokeless powder would be detonated at the Practical Training Area per year. This is equivalent to approximately 14% of the smokeless powder that was considered in the air emissions analysis for operations at the proposed EOD Proficiency Range. Therefore, emissions from Practical Training Area would be much less than those reported for smokeless powder at the EOD Proficiency Range (see **Table 3-3**). The primary emissions from operations at the Practical Training Area would be CO_2 and CO, and other NAAQS criteria pollutants, GHGs, and toxic chemicals (i.e., those chemicals regulated under Section 313 of the EPCRA) would be emitted at low levels (USEPA, 1995) and would not approach the applicable *de minimis* thresholds.

All EOD operations occurring at the Temporary EOD Operations Facilities would be relocated to the Permanent EOD Facility following its completion. As for the Temporary EOD Operations Facilities, air emissions from the Permanent EOD Facility are expected to be considered *de minimis* under 30 TAC 116.119 and would not be subject to NSR.

3.4 WASTE MANAGEMENT AND HAZARDOUS MATERIALS

3.4.1 Solid Waste

3.4.1.1 Existing Conditions

The Resource Conservation and Recovery Act (RCRA) defines solid waste as any discarded material that is not otherwise excluded by other sections of the regulation (40 CFR 261.2). Solid wastes (municipal and industrial) are generated from all areas of NAS Fort Worth JRB, including housing, municipal operations, office complexes, industrial facilities, and construction/demolition areas. Solid waste at the installation is managed in accordance with the RCRA, the US Navy's *Environmental Readiness Program Manual* (ERPM; US Navy, 2007), and NAS Fort Worth JRB's *Integrated Solid Waste Management Plan* (ISWMP). Reuse and/or recycling of suitable materials are strongly encouraged.

EOD Temporary Operations Facilities: Minor amounts of solid waste are currently produced from office-type work at Buildings 1651 and 1653.

EOD Proficiency Range and EOD Practical Training Area: No solid waste is currently being produced at either of these locations.

3.4.1.2 Consequences of the No-Action Alternative

Under the No-Action Alternative, the solid waste generation on, or in the vicinity of, NAS Fort Worth JRB would not be affected because the Proposed Action would not occur.

3.4.1.3 Consequences of the Proposed Action

EOD Temporary Operations Facilities: Implementation of the Proposed Action would result in temporary insignificant adverse impacts from solid waste generation at this location. Demolition/construction activities associated with the renovation of B-1653 and the components necessary for placement of the temporary ARMAG would create a short-term increase in solid waste generation. The steel-beam structure on the north side of B-1653 would be removed and the materials would be recycled on-base. Concrete would be recycled by the contractor. EOD operations at this site would consist of typical office-type work and would generate additional solid waste over the long-term. When compared to the current number of personnel at NAS Fort Worth JRB, the solid waste produced by the 14 EOD personnel and operations at this location would be negligible. Solid waste would be reused or recycled, as practicable, and would be handled in accordance with RCRA, the US Navy's ERPM (US Navy, 2007), and NAS Fort Worth JRB's ISWMP. EOD operations and associated solid waste generation at this location would be relocated to the Permanent EOD Facility following its completion.

EOD Proficiency Range: Implementation of the Proposed Action would result in insignificant adverse impacts to solid waste generation at this location. Construction of the EOD Proficiency Range would create a minor, short-term increase in solid waste generation. EOD operations at the Proficiency Range would generate minor amounts of additional solid waste over the long-term. Solid waste would be reused or recycled, as practicable, and would be handled in accordance with RCRA, the US Navy's ERPM (US Navy, 2007), and NAS Fort Worth JRB's ISWMP.

EOD Practical Training Area: Implementation of the Proposed Action would result in insignificant adverse impacts to solid waste generation at this location. Construction of the EOD Practical Training Area and the components necessary for placement of the permanent ARMAG would create a minor, short-term increase in solid waste generation, and EOD operations at the Practical Training Area would generate minor amounts of additional solid waste over the long-term. Solid waste would be reused or recycled, as practicable, and would be handled in accordance with RCRA, the US Navy's ERPM (US Navy, 2007), and NAS Fort Worth JRB ISWMP.

The proposed future construction of the Permanent EOD Facility would create a minor, short-term increase in solid waste generation at this location. All EOD operations occurring at the

Temporary EOD Operations Facilities would be relocated to the Permanent EOD Facility following its completion, and the solid waste generated at the Permanent EOD Facility would be similar to the solid waste generation described for the Temporary EOD Operations Facilities. Solid waste would be reused or recycled, as practicable, and would be handled in accordance with RCRA, the US Navy's ERPM (US Navy, 2007), and NAS Fort Worth JRB's ISWMP.

3.4.2 Hazardous Materials and Waste

3.4.2.1 Existing Conditions

According to the Institute of Hazardous Materials Management (http://www.ihmm.org/, accessed 18 October 2011), hazardous materials refer to "any item or agent (biological, chemical, physical) which has the potential to cause harm to humans, animals, or the environment, either by itself of through interaction with other factors." Similarly, the USEPA (http://www.epa.gov/osw/hazard/, accessed 18 October 2011) defines hazardous waste as "waste that is dangerous or potentially harmful to our health or the environment." In the US, hazardous wastes and materials are defined and regulated by multiple laws and regulations administered by the USEPA, Occupational Safety and Health Administration (OSHA), US Department of Transportation, and the US Nuclear Regulatory Commission, respectively. Hazardous materials are used in, and hazardous wastes are generated by, normal operations at NAS Fort Worth JRB, which is registered as a large quantity generator and a transporter of hazardous waste under RCRA. Hazardous materials and waste at NAS Fort Worth JRB are managed in accordance with RCRA, the US Navy's ERPM (US Navy, 2007), and NAS Fort Worth JRB's *Hazardous Waste Management Plan* (HWMP).

Military munitions are not considered solid waste when they are used for their intended purpose and are destroyed during range-clearance operations, or when, having not been used or discharged, they are subjected to materials recovery activities. The Military Munitions Rule (62 CFR 6621) specifies when conventional and chemical military munitions become waste subject to RCRA. In general, unused military munitions become waste when they are abandoned, removed from storage for purposes of disposal, deteriorated to the point that they cannot be returned to serviceable condition or recycled for other purposes, or determined by an authorized military official to be a solid waste. Military munitions become solid waste when fired and remain solid waste if removed from their landing spot, transported or managed off the range, or disposed (e.g., buried or landfilled) on the range. Given the nature of military munitions, once such items are classified as solid waste the potential exists for further classification as hazardous waste and this determination would depend on the specific characteristics of the item. For example unexploded ordnance (UXO) that is transported for off-range disposal would likely be classified as hazardous waste. The Military Munitions Rule conditionally exempts such hazardous waste from the RCRA manifest and container marking requirements during transportation between DoD facilities. Emergency EOD response to an explosive hazard on a range does not require a permit under RCRA. However, if the explosive hazard is not located on a range it should be transported to a RCRA licensed disposal site. If the explosive hazard cannot be transported, an interim permit must be obtained for thermal treatment in place (40 CFR 270.61).

EOD Temporary Operations Facilities and EOD Proficiency Range: Hazardous materials and waste are not currently used, produced, or stored at these locations.

EOD Practical Training Area: Hazardous materials and waste are not currently used, produced, or stored at this location. However, the area located immediately west of the proposed EOD Practical Training Area was formerly a small arms firing range. Hazardous waste in the form of residual lead was removed from soil after the firing range was closed. There is no record that the firing range was ever placed in the Air Force Installation Restoration Program, and TCEQ has not identified it as a Solid Waste Management Unit.

3.4.2.2 Consequences of the No-Action Alternative

Under the No-Action Alternative, no additional hazardous materials or waste would be used or generated from the Proposed Action because the Proposed Action would not occur.

3.4.2.3 Consequences of the Proposed Action

Hazardous materials, such as fuels for demolition/construction equipment and vehicles, would be used during construction activities at each of the Proposed Action Sites. Hazardous materials used or encountered during demolition/construction would be managed in accordance with NAS Fort Worth JRB's HWMP and all applicable local, state, and federal regulations, so no significant adverse impacts would occur.

EOD Temporary Operations Facilities: Implementation of the Proposed Action would result in minor adverse effects related to hazardous materials and waste associated with the handling and storage of EOD-related explosives at this location. Minor quantities of various hazardous materials (e.g., batteries, cleaning supplies, lubricants, etc.) would be stored and used as part of operations at the EOD Temporary Operations Facility. Use and disposal of hazardous materials would comply with NAS Fort Worth JRB's ISWMP and HWMP, as well as other applicable local, state, and federal regulations. Universal wastes (fluorescent bulbs) from light fixtures would be stored and handled in accordance with the *Standards for Universal Waste Management* (40 CFR Part 273) and NAS Fort Worth JRB's HWMP. As discussed in **Section 3.7**, EOD-related explosives would be stored at the proposed Temporary ARMAG in accordance with AFMAN 91-201 (USAF, 2011). EOD operations and associated use of hazardous materials at this location would be relocated to the Permanent EOD Facility following its completion.

EOD Proficiency Range: Implementation of the Proposed Action would result in negligible to minor adverse effects related to hazardous materials and waste associated with the use and storage of EOD-related explosives at this location. EOD-related explosives would be used according to their intended purpose during EOD operations. These materials would be destroyed on the Proficiency Range and would not become hazardous waste. EOD-related explosives would also be stored at the proposed ARMAG while the Proficiency Range is in use. The use of EOD-related explosives at the proposed EOD Proficiency Range and the storage of such materials at the proposed ARMAG are further discussed in **Section 3.7**.

EOD Practical Training Area: Implementation of the Proposed Action presents a risk for minor adverse effects related to hazardous materials and waste associated with the former firing range and the use and storage of EOD-related explosives at this location. The Permanent EOD Facility and Practical Training area are outside the boundaries of the former firing range where residual

lead was removed from the soil, so the likelihood of encountering residual lead contamination is remote. Should trace amounts of residual lead contamination or other hazardous wastes be encountered during construction, such materials would be handled and managed in accordance with the NAS Fort Worth JRB's HWMP and all applicable local, state, and federal regulations. The use of EOD-related explosives and the storage of such materials at the proposed ARMAG is further discussed in **Section 3.7**. EOD-related explosives would be used according to their intended purpose during EOD operations at the Practical Training Area and would be stored at the proposed ARMAG in accordance with AFMAN 91-201 (USAF, 2011). These materials would be destroyed during operations and would not become hazardous waste.

All EOD operations occurring at the Temporary EOD Operations Facilities, including the previously described minor quantities of hazardous materials and universal waste generation, would be relocated to the Permanent EOD Facility following its completion. These materials would continue to be managed in accordance with NAS Fort Worth JRB's ISWMP and HWMP, as well as other applicable local, state, and federal regulations.

3.5 NOISE ENVIRONMENT

The USEPA (http://www.epa.gov/air/noise.html, accessed 25 October 2011) defines noise as "unwanted or disturbing sound" which can interfere with normal activities or disrupt/diminish quality of life. Human response to noise varies according to the intensity and frequency of the noise, distance from the noise source, time of day, and receptor sensitivity. The decibel (dB) is a standard unit that provides a relative measure of the intensity of sound. Due to the large range of possible sound intensities, dBs are based on a logarithmic, as opposed to a linear, scale. Table 3-4 relates commonly encountered sounds to their approximate dB values.

Table 3-4. Average Sound Pressure Levels Associated with Common Sounds.

Noise Category	Decibels (dBA)	Comparable Sound at Operator's Location
Painful	150	Fireworks at 3 feet
	140	Firearms
	130	Jackhammer
	120	Siren
Extremely Loud	110	Chain saw
	100	Hand drill
	90	Subway

Very Loud	80	Kitchen blender
	70	Vacuum cleaner
Moderate	60	Typical conversation
	50	Rainfall
	40	Quiet room
Faint	30	Whisper

Source: Adapted from the American Speech-Language-Hearing Association (http://www.asha.org/public/hearing/Noise/, accessed 25 October 2011).
NOTE: Sound levels provided are approximate and are as generally perceived by an operator or close observer of the equipment or situation listed.

Noise Metrics

Many filters and metrics have been developed to improve the measurement of dBs for specific applications. The A-weighted decibel (dBA) attempts to approximate the human frequency response and better express the way people perceive noise. The dBA is commonly used to assess environmental noise, industrial noise, and potential noise-related health effects. The C-weighted decibel (dBC) is similar to the dBA, but incorporates more low-frequency noise. Impulse-type noises, such as large-caliber weapons firing or demolition operations, are commonly measured with dBC because it incorporates low rumbles and noise-induced vibrations. The Day-Night Average Noise Level (DNL) is a time-weighted measurement of average noise levels. DNLs are calculated for 24-hour periods, and nighttime (10:00pm – 7:00am) noise events receive a 10-dB penalty. Measurements of long-term average noise, such as DNL, are valuable tools in assessing community response to sounds associated with relatively continuous noise generating activities (e.g., aircraft, traffic, repeated blasts; Pater et al. 2007). However, such measurements provide no indication of the loudness of individual events (e.g., gun fire or blast noise) to which the public may be exposed.

Blast Noise

When discrete, high-energy blast noise is a concern, it is more appropriate to assess the risk of community complaints associated with peak sound pressure levels (dBP). Peak sound levels are typically not frequency weighted, are calculated for single events, and are extremely short in duration (i.e., milliseconds). Peak sound levels expected to result from a single blast event are commonly predicted using PK(met) metrics which account for weather-related statistical variation in single event dBP measurements (Table 3-5). PK(met) metrics are not measurements of actual sound levels; rather, they are predictions of dBP that factor in the statistical variations caused by weather. PK(met) metrics can be adjusted to predict single event peak sound levels under a range of weather conditions by either including or eliminating unfavorable weather

conditions from the metric calculation. However, the best or most favorable weather conditions are always included in the calculation.

Table 3-5. Description of PK(met) Peak Sound Level Metrics

PK(met) Metric	Description
PK15(met)	The predicted peak sound level, factoring in the statistical variations caused by weather, that would be exceeded only 15% of the time (i.e., 85% certainty that actual dBP would be equal to or below this sound level). Used to estimate peak sound levels under mixed weather conditions (including the best conditions, favorable conditions, and unfavorable conditions).
PK50(met)	The predicted peak sound level, factoring in the statistical variations caused by weather, that would be exceeded only 50% of the time (i.e., 50% certainty that actual dBP would be equal to or below this sound level). Used to estimate peak sound levels under favorable weather conditions (including the best conditions).
PK90(met)	The predicted peak sound level, factoring in the statistical variations caused by weather, that would be exceeded 90% of the time (i.e., 10% certainty that actual dBP would be equal to or below this sound level). Used to estimate peak sound levels under only the best weather conditions.

Weather conditions can affect sound propagation and dramatically alter peak noise levels. Approximations of the effects of weather conditions on sound propagation have been established (**Table 3-6**). Generally, PK90(met) can be used to estimate peak sound levels under the best weather conditions, PK50(met) can be used to estimate peak sound levels under favorable weather conditions (that includes the best conditions), and PK15(met) can be used to estimate peak sound levels under mixed weather conditions (that include the best conditions, favorable conditions, and unfavorable conditions).

Table 3-6. Favorable and Unfavorable Weather Conditions for Limiting Noise Propagation

Favorable Conditions	Unfavorable Conditions
- Clear skies with billowy cloud formations, especially during warm periods of the year. - Period of rising barometric pressure immediately following a storm.	- Periods of high winds blowing in the direction of nearby noise receptors. - Clear days with observed layering of smoke or fog. - Cold and hazy or foggy mornings. - Temperature inversions below 5,000 ft.

Source: Adapted from NAS Whidey Island (2000) and Fort Richardson (2010)

Noise Management

NAS Fort Worth JRB completed noise modeling in 2004 as part of an Air Installation Compatible Use Zone (AICUZ) study (NCTCOG, 2008). The noise modeling contours developed in the study were based on A-weighted DNLs (ADNLs) and measured in units of dBA. The ADNL is a descriptor of annual average day-night noise used to assess exposure to aircraft noise, predict community response to various noise levels and identify compatible land uses. The AICUZ program seeks to identify areas with elevated noise levels in order to promote compatible land uses. The following assessment and discussion of blast noise presented in this EA is principally based on guidance from US Army Regulation 200-1, *Environmental Protection and Enhancement* (US Army 2007). US Army (2007) establishes noise zones and acceptable land uses for military operations involving aircraft, impulsive noise, and small arms (**Table 3-7**). As previously discussed, high-energy blast noise is predicted by calculation of peak noise in dBP, such as PK15(met). To that end, Pater (1976) developed a set of criteria to assess the risk of noise complaints at specific peak noise levels and these criteria have been adopted as blast noise management guidance by the US Army (US Army, 2007; **Table 3-8**).

Table 3-7. Noise Zones and Land Use Compatibility

Noise Zone	Noise Level	Acceptable Land Use	Aircraft Noise (ADNL)	Impulsive Noise (CDNL)
1	Low	Noise-sensitive land uses are acceptable	< 65 dBA	< 62 dBC
2	Moderate	Noise-sensitive land uses normally not recommended	65-75 dBA	62-70 dBC
3	High	Noise-sensitive land uses not recommended	> 75 dBA	> 70 dBC

Source: Adapted from US Army (2007).

Table 3-8. Risk of Complaint from Single Event Peak Sound Level.

Risk of Noise Complaints	Description of Blast Event	PK15(met)
Low	Audible and distant	< 115 dBP
Moderate	Clearly audible	115-130 dBP
High	Loud	> 130 dBP

Source: Adapted from Pater (1976) and US Army (2007).

3.5.1.1 Existing Conditions

In general, current activities and operations occurring on the three Proposed Action Sites do not generate noise, or significantly affect the sound environment. Off-site noise is generated by vehicles on the adjacent roadways and aircraft on the airfield and taxiways. Noise sources such as construction activities, heavy equipment operation, and vehicle traffic are minor relative to the aircraft noise generated by airfield operations.

EOD Temporary Operations Facilities: Based on the most recent noise contour data (NCTCOG, 2008), approximate ADNLs at this site range between 65 and 75 dBA (moderate noise levels).

EOD Proficiency Range: Based on the most recent noise contour data (NCTCOG, 2008), approximate ADNLs at this site range between 80 and 85 dBA (high noise levels).

EOD Practical Training Area: Based on the most recent noise contour data (NCTCOG, 2008), approximate ADNLs at this site range between 60 and 65 dBA (low noise levels).

3.5.1.2 Consequences of the No-Action Alternative

Under the No-Action Alternative, the noise environment on, or in the vicinity of, NAS Fort Worth JRB would remain unchanged because the Proposed Action would not occur.

3.5.1.3 Consequences of the Proposed Action

EOD Temporary Operations Facilities: Implementation of the Proposed Action would result in insignificant, temporary, and localized adverse impacts to noise at this location. The noise impacts would be associated with the demolition/renovation of Building 1653. Hearing protection, if required, would comply with OSHA and USAF Environment, Safety, and Occupational Health (ESOH) requirements. EOD operations at this location would largely be limited to office-type work, and noise would be typical of an office setting. The most notable noise generated during EOD operations would likely be associated with the operation of the BSERV and the loading/unloading of EOD explosives at the adjacent ARMAG. These noises would be minor in comparison to the existing noise levels at this location. Operations at this facility would be relocated to the Permanent EOD Facility following its completion.

EOD Proficiency Range: Construction of the Proposed Action would result in insignificant, localized adverse impacts to the noise environment at this site and in the area surrounding NAS Fort Worth JRB. Sound levels associated with construction of the Proficiency Range would be temporary and minor as compared to the existing noise associated with airfield operations.

Sound levels associated with EOD operations at the Proficiency Range were modeled using BNOISE2 (USACHPPM, 2003) and specific parameters of the model are discussed in **Appendix C**. The modeling approach assumed the maximum case scenario and results should be considered to represent maximum expected sound levels experienced by a receptor outside of a building or other structure. Specifically, sound was modeled for explosives exceeding the maximum NEW that would be detonated under the Proposed Action. BNOISE2 operates with preset quantities of explosives. The noise modeling presented herein used the preset quantities that were closest to the quantities specified in the Proposed Action. For the Proficiency Range, the closest preset was 2.6-lbs NEW as compared to the proposed 2.5-lbs NEW.

EOD operations at the Proficiency Range would involve approximately 10 detonations of 2.5 lbs NEW of HD 1.1 on one day per month. Detonations would normally occur between 7:00am and 4:00pm on a single Saturday during each month. This would result in annual average sound levels exceeding 62 CDNL in the vicinity of Proficiency Range (**Figure 7**). The affected areas

would be completely within the existing boundaries of AICUZ Noise Zones 2 and 3 associated with airfield operations at NAS Fort Worth JRB (see **Figure 7** and **Table 3-7**). Therefore, operation of the Proficiency Range would not increase annual average sound levels or affect acceptable land uses in the vicinity of NAS Fort Worth JRB. Single event peak sound levels were estimated under the best weather conditions (PK90(met)), favorable weather conditions (PK50(met)), and mixed weather conditions (PK15(met); **Figure 8**). Descriptions of applicable peak sound levels and areas potentially affected are provided below:

- **Clearly Audible Sound Levels (115-130 dBP)** – The area expected to be subjected to peak sound levels between 115 and 130 dBP outside buildings would vary according to weather conditions (see **Figure 8**). In each case, much of this area is occupied by NAS Fort Worth JRB or is located within existing AICUZ Noise Zones 2 and 3. Within this area, EOD blasts would be clearly audible to noise receptors outside. During mixed weather conditions (i.e., including both favorable and unfavorable conditions), off-base noise receptors would include residential developments, schools, churches, parks, golf courses, and persons recreating on Lake Worth, the West Fork of the Trinity River, or Farmers Branch. During favorable weather conditions, off-base noise receptors would include a small area of residential development, parks, a golf course, and persons recreating on Lake Worth. During the best weather conditions, off- base noise receptors would be limited to persons recreating on Lake Worth.

According to US Army guidance, hearing protection is required for any exposure to noise decibels greater than 140 dBP (US Army, 2003). Formulas provided by US Army (2003) indicate that noise protection would be required for persons located within 994 feet of the detonation point. This area is largely limited to NAS Fort Worth JRB property, with the exception of a small, near-shore portion of Lake Worth located northeast of the detonation point.

Based on the preceding information, operation of the Proposed EOD Proficiency Range would result in an insignificant adverse impact to the noise environment on, and in the vicinity of, NAS Fort Worth JRB. Operation of the Proficiency Range would not alter acceptable land uses in areas surrounding the base nor would it pose hearing conservation risks to the general public.

Depending upon weather conditions, some single event peak sound levels from detonations could be loud enough to pose a risk of complaint from some noise receptors in outdoor areas adjacent to NAS Fort Worth JRB (see **Figure 8**) according to the risk criteria in **Table 3-8**.

- **Loud Sound Levels (>130 dBP)** – The area expected to be subjected to peak sound levels above 130 dBP (outside buildings) would vary according to weather conditions (see **Figure 8**). Much of this area is occupied by NAS Fort Worth JRB. Within this area, single EOD blasts would be perceived as loud sound by noise receptors. During mixed weather conditions (i.e., including both favorable and unfavorable conditions), off-base noise receptors would include a very small area of residential development, and persons recreating on Lake Worth and a small portion of the West Fork of the Trinity River. During favorable weather conditions, off-base noise receptors would be limited to persons recreating on a small portion of Lake Worth. During the best weather conditions,

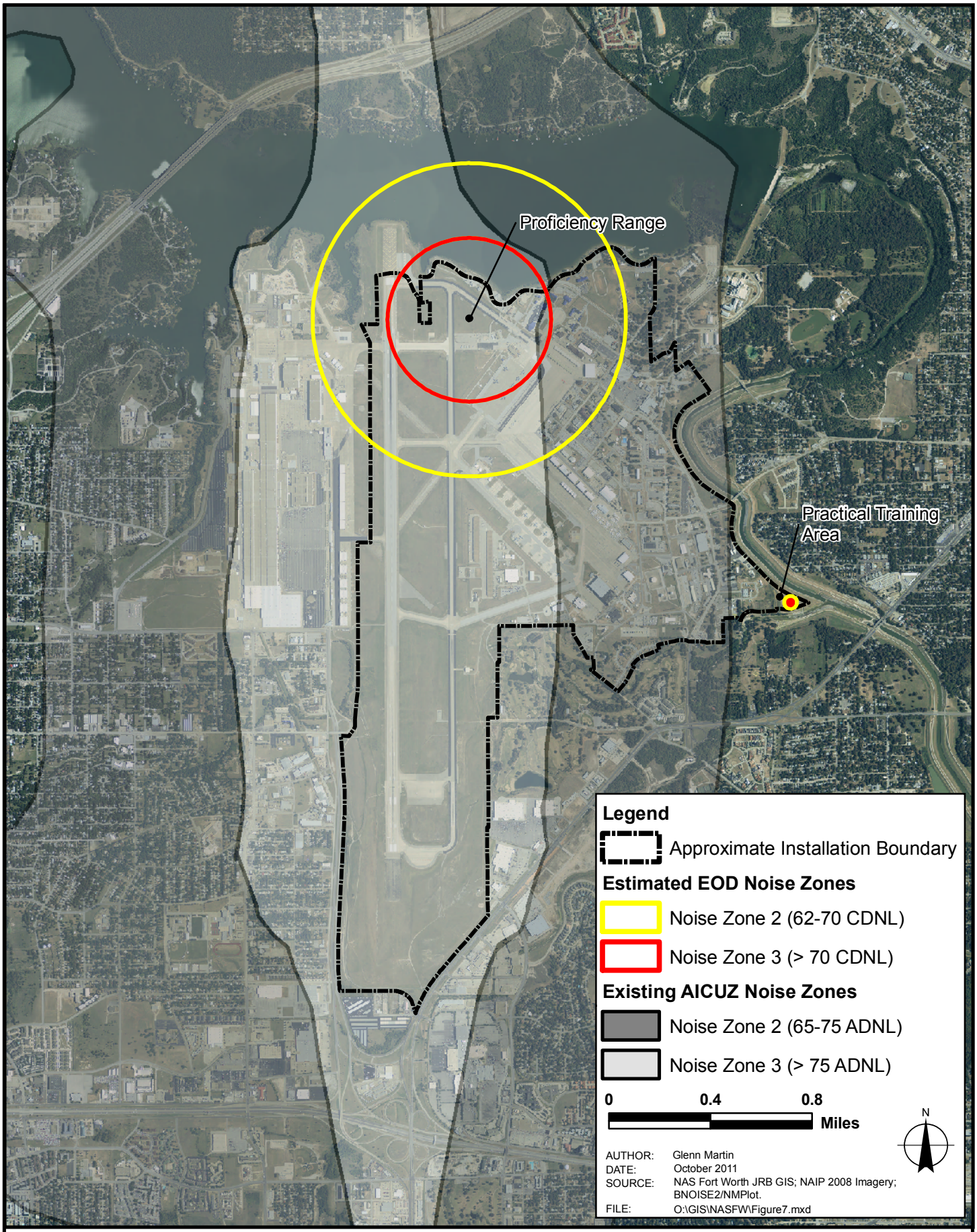

Figure 7. Noise Zones Based on C-Weighted Day-Night Noise Levels (CDNLs) Estimated to Result from Operation of Proposed EOD Ranges

Map A. Operation under mixed weather conditions (including favorable and unfavorable) - PK15(met)

Map B. Operation under favorable weather conditions – PK50(met)

Map C. Operation under best weather conditions - PK90(met)

Legend

Approximate Installation Boundary

Risk of Complaints

High

Moderate

Sensitive Noise Receptors

Schools

Park, Golf Course, Cemetery, etc.

Residential

These maps illustrate single event peak noise levels using PK(met) metrics. PK(met) metrics are appropriate for estimating the complaint risk from single event peak noise levels perceived by humans.

Figure 8. Estimated Risk of Complaints Associated with Operation of Proposed EOD Ranges

0 0.5 1 Miles

N

AUTHOR: Glenn Martin
DATE: November 2011
SOURCE: NAS Fort Worth JRB GIS; NAIP 2008 Imagery; NCTCOG 2005 Land Use; ESRI USA Base Map; BNOISE2/NMPLOT
FILE: O:\GIS\NASFW\Figure8.mxd

sound levels greater than 130 dBP would be largely contained within NAS Fort Worth JRB, but would encompass a small portion of Lake Worth. Note that only persons outside buildings would experience peak sound levels above 130 dBP. Persons located indoors would experience much lower peak sound levels.

EOD Practical Training Area: Construction of the Proposed Action would result in insignificant, localized adverse impacts to noise at this site and in the area surrounding NAS Fort Worth JRB. Noise impacts associated with construction of the Practical Training Area would be temporary and minor as compared to the existing noise associated with airfield operations.

Sound levels associated with EOD operations at the proposed Practical Training Area were modeled using BNOISE2 (USACHPPM, 2003) and specific parameters of the model are discussed in **Appendix C**. The modeling approach assumed the maximum case scenario and results should be considered to represent maximum expected sound levels. Specifically, sound was modeled for explosives exceeding the maximum NEW that would be detonated under the Proposed Action. BNOISE2 operates with preset quantities of explosives, and the noise modeling presented herein used the preset quantities that were closest to the quantities specified in the Proposed Action. For the Practical Training Area, the closest preset was 0.055-lbs NEW as compared to the proposed 0.051-lbs NEW.

EOD operations at the Practical Training Area would involve approximately four detonations of 0.051 lbs NEW of HD 1.4 per week (Monday – Friday). Detonations would normally occur between 7:00am and 4:00pm. Nighttime training events would be identical to daytime training events and would occur up to three times per year (i.e., six total nighttime detonations per year). This would result in annual average sound levels exceeding 62 CDNL in the vicinity of the Proficiency Range (see **Figure 7**). However, these sound levels and associated Noise Zones would be completely contained on NAS Fort Worth JRB and therefore would not affect acceptable land uses in the vicinity of NAS Fort Worth JRB. Single event peak sound levels were estimated under the best weather conditions (PK90(met)), favorable weather conditions (PK50(met)), and mixed weather conditions (PK15(met); see **Figure 8**). Descriptions of applicable peak sound levels and areas potentially affected are provided below:

- **Clearly Audible Sound Levels (115-130 dBP)** – The area expected to be subjected to peak sound levels between 115 and 130 dBP would vary according to weather conditions (see **Figure 8**). In each case, much of this area is occupied by NAS Fort Worth JRB. Within this area, EOD blasts would be clearly audible to noise receptors outdoors. During mixed weather conditions (i.e., including both favorable and unfavorable conditions), off-base noise receptors would include residential developments, churches, and persons recreating on the West Fork of the Trinity River or Farmers Branch. During favorable weather conditions, off-base noise receptors would include a small area of residential development, and persons recreating on the West Fork of the Trinity River or Farmers Branch. During the best weather conditions, off-base noise receptors would be limited to persons recreating on a small portion of the West Fork of the Trinity River or Farmers Branch. Note that only persons located outside would experience peak sound

levels between 115 and 130 dBP, and persons located indoors would experience much lower levels of peak sound.

- **Loud Sound Levels (> 130 dBP)** – The area expected to be subjected to peak sound levels above 130 dBP would vary according to weather conditions (see **Figure 8**). Much of this area is occupied by NAS Fort Worth JRB. Within this area, single EOD blasts would be perceived as loud sound by noise receptors outdoors. During mixed weather conditions (i.e., including favorable and unfavorable conditions), off-base noise receptors would include a very small area of residential development, and persons recreating on a small portion of the West Fork of the Trinity River or Farmers Branch. During favorable weather conditions, off-base noise receptors would be limited to persons recreating on a small portion of the West Fork of the Trinity River or Farmers Branch. During the best weather conditions, sound levels greater than 130 dBP would be contained on NAS Fort Worth JRB. Note that only persons standing outside would experience peak sound levels above 130 dBP, and persons located indoors would experience much lower levels of peak sound.

According to US Army guidance, hearing protection is required for any exposure to noise decibels greater than 140 dBP (US Army, 2003). Formulas provided by US Army (2003) indicate that noise protection would be required for persons located within 28 feet of the detonation point. This area is completely limited to NAS Fort Worth JRB property.

Based on the preceding information, operation of the Proposed EOD Practical Training Area would result in an insignificant adverse impact to the noise environment on, and in the vicinity of, NAS Fort Worth JRB. Operation of the Practical Training Area would not alter acceptable land uses in areas surrounding the base nor would it pose hearing conservation risks to the general public. Depending upon weather conditions, some single event peak sound levels from detonations could be sufficiently loud to cause some degree of annoyance to off-base noise receptors in outdoor areas adjacent to NAS Fort Worth JRB.

Construction of the Permanent EOD Facility would result in insignificant, temporary, and localized adverse impacts to noise at this location. Hearing protection, if required, would comply with OSHA and USAF ESOH requirements. Operations at the Temporary EOD Facility would be relocated to the Permanent EOD Facility following its completion. EOD operations at this location would largely be limited to office-type work and noise would be typical of similar office settings. The most notable noise generated during operations of the Permanent EOD Facility would likely be associated with the operation of the BSERV and the loading/unloading of EOD explosives at the adjacent ARMAG, and these noises would be minor.

3.5.1.4 Noise Management

As previously described, implementation of the Proposed Action would not alter existing compatible land uses beyond the boundary of NAS Fort Worth JRB. However, people and structures on, and in the immediate vicinity of, NAS Fort Worth JRB would be subjected to elevated peak noise levels associated with single event peak noise levels of short duration (i.e.

milliseconds) at the EOD Proficiency Range and Practical Training Area. During the best weather conditions, very loud sound levels would not extend off NAS Fort Worth JRB, while during mixed weather conditions (i.e., including both favorable and unfavorable conditions), some outdoor receptors in the surrounding community could experience very loud sound levels off the installation in a very small area of residential development, and on a small portion of the West Fork of the Trinity River or Farmers Branch. On-base personnel and structures would be protected as necessary through compliance with applicable regulations and standards (e.g., Air Environmental Safety, Fire Protection, and Health (AFOSH) Program, OSHA, etc.). While not required for implementation of the Proposed Action, some BMPs that could be considered for use, as necessary and appropriate, to reduce the impact of elevated peak sound levels in areas surrounding the base include:

- Inform the affected public about upcoming EOD operations prior to commencing operations;
- Place marker buoys or other appropriate signage in applicable areas of Lake Worth, the West Fork of the Trinity River, and Farmers Branch as well as nearby parks and golf courses to inform recreating persons of potential peak sound levels.
- Sound a horn or siren to alert and warn the public before commencing detonations;
- Incorporate considerations for weather conditions and time of day into operational planning schedules;
- Place sand bags over explosive materials to muffle the sound of detonation (Swearingen et al., 2011);
- Design and construct additional berms or other sound-absorbing features such as rubber materials on training area fences as needed to further reduce noise from detonation points;
- Provide a point of contact on the installation to respond to public comments and inquiries regarding EOD operations.

3.6 SOCIOECONOMIC ENVIRONMENT AND ENVIRONMENTAL JUSTICE

Socioeconomic resources include the basic attributes and resources associated with the human environment. In particular, this includes population and economic activity. Economic activity typically encompasses employment, personal income, and industrial growth. Additionally, The USAF's *Interim Guide for Environmental Justice with the Environmental Impact Analysis Process* and EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, require consideration of environmental justice issues, and these concerns are addressed as part of the socioeconomic environment.

3.6.1.1 Existing Conditions

Based on review of US Census Bureau data (USCB, 2011), Tarrant County has a population of 1,809,034. Approximately 33% of the population is minority, and less than 15% of the county's population is below the poverty level. According to USEPA's EJView website

(http://epamap14.epa.gov/ejmap/entry.html; accessed 14 October 2011), which uses data from the 2000 census, the majority of the area covered by NAS Fort Worth JRB had a minority population of between 30-40% and 0-10% of the population was below poverty level. The area located immediately east of NAS Fort Worth JRB represents the off-base area in closest proximity to the Proposed Action Areas. This area was widely variable with respect to minority populations. The majority of this area had a minority population of between 20-30%; however, values ranged from 0-10% up to 40-100%. Generally, 10-20% of the population in this area was below the poverty line. NAS Fort Worth JRB is one of the largest employers in the region and has an economic impact of approximately $1.3 billion (NAS Fort Worth JRB, 2011b).

3.6.1.2 Consequences of the No-Action Alternative

Under the No-Action Alternative, the socioeconomic environment and environmental justice conditions in the vicinity of NAS Fort Worth JRB would remain unchanged because the Proposed Action would not occur. Minority populations and low-income populations would not experience a significant disproportionate impact, and there would be no significant environmental health or safety risks to children.

3.6.1.3 Consequences of the Proposed Action

Implementation of the Proposed Action would benefit the socioeconomic environment in the vicinity of NAS Fort Worth JRB. Implementation of the Proposed Action would provide a short-term economic benefit to the local/regional economy through new construction expenditures, including demolition/construction labor salaries, equipment, materials, site improvements, pavements, communications, and utilities. The demolition/construction activities would positively impact the economy, with expenditures for goods and services at local businesses by the demolition/construction contractor and workers. The addition of 14 EOD personnel would represent a minor long-term economic benefit to the local/regional economy. Based on the demographics of the local population and the findings of **Sections 3.5.1.3** and **3.7.1.3** of this EA, the Proposed Action would not have a disproportionate adverse effect on minority or low-income populations nor would it pose environmental health or safety risks to children.

3.7 SAFETY

3.7.1.1 Existing Conditions

Safety generally refers to those issues that directly affect the protection of human life and property. Personnel at NAS Fort Worth JRB are protected by installation, DoD, and OSHA safety standards and requirements. The predominant safety issues at NAS Fort Worth JRB involve aviation, munitions, fire prevention, and ATFP standards. The primary safety concern in this EA is munitions safety. Currently when a military munitions hazard is identified on NAS Fort Worth JRB, EOD support is requested from Dyess AFB or Fort Hood, Texas. The EOD response time from these locations is approximately 3 to 4 hours. During this prolonged response time personnel may be exposed to explosive hazards and hazard areas must be cordoned off thereby impacting NAS Fort Worth JRB's missions. Civilian and federal law enforcement agencies are subject to similar EOD response times when responding to explosive hazards involving military munitions found outside of military installations in the area.

The DoD and USAF have established safety standards for explosives (DoD, 2008; USAF, 2011). The standards serve to protect personnel, property, and the environment and apply to explosives throughout their lifecycle. Explosive materials storage facilities must be located in areas where security of the materials can be ensured. The standards include explosive safety quantity distance (QD) arcs which prescribe minimum distances between a potential explosion site and potential exposed sites. The arcs define the distance necessary to provide an adequate degree of protection to potential exposed sites. Each munitions storage or handling facility has a QD zone extending outward for a prescribed distance, resulting in a series of arcs that define the perimeter of the QD zone. The size of a QD zone depends on several factors, including the type and quantity of explosives stored in the facility. Explosives are separated into respective HDs based on the predominant hazard characteristics associated with specific types of explosive materials. The quantity is based on the NEW of the material, i.e., the weight of the actual explosives in the munitions not including the weight of the steel casing or other non-explosive components. QD zones have been established for five locations on NAS Fort Worth JRB (NAS Fort Worth JRB, 2010).

EOD Temporary Operations Facilities: There are no known safety issues associated with this site.

EOD Proficiency Range: This site is located on the airfield and is managed in accordance with the Bird/Air Strike Hazard Reduction Plan (NAS Fort Worth JRB, 2004a). This site also located within multiple existing QD zones associated with the magazines north of Taxiway Alpha and Taxiway J-ROW. No other known safety concerns are associated with this site.

EOD Practical Training Area: No known safety issues are associated with this site.

3.7.1.2 Consequences of the No-Action Alternative

Under the No-Action Alternative, safety concerns on, and in the vicinity of, NAS Fort Worth JRB would remain unchanged because the Proposed Action would not occur. The 301 FW and NAS Fort Worth JRB would continue to request EOD support from Dyess AFB and Fort Hood, Texas. This would result in a 3- to 4-hour response time that would endanger lives by prolonging the time personnel may be exposed to explosive hazards. The No-Action Alternative also would impact mission accomplishment by preventing movement of personnel within any cordoned area for extended periods. Further, civilian and federal law enforcement agencies in the local area would be subjected to similar prolonged EOD response time when responding to explosive hazards involving military munitions found outside of military installations in the area.

3.7.1.3 Consequences of the Proposed Action

General descriptions of the explosives that would be transported, stored, and used as part of the Proposed Action are provided in AFMAN 91-201 (USAF, 2011) and paraphrased below:

- **HD 1.1 – Mass-explosion**: Blast is the primary hazard in this HD. Items may mass-detonate when a small portion is initiated. Explosions generally cause severe structural

damage to adjacent objects. Items generally present a fragmentation hazard, either from the case of the device or from the packaging or facility in which the materials are stored.

- **HD 1.4 – Moderate Fire, No Significant Blast or Fragment**: Items present a fire hazard but not a blast hazard. There is virtually no fragmentation or toxic hazard beyond the fire hazard clearance ordinarily specified for high-risk materials.

Implementation of the Proposed Action would have both beneficial and insignificant adverse impacts to safety on, and in the vicinity of, NAS Fort Worth JRB. The insignificant adverse impacts would be associated with specific components of the Proposed Action as detailed in the following paragraphs. The beneficial impacts of the Proposed Action would be associated with the local presence of the EOD Flight at NAS Fort Worth JRB. The current EOD response time would be greatly reduced, because local EOD personnel would be available to rapidly respond to military munitions hazards both on and off of the installation.

EOD Temporary Operations Facilities: Implementation of the Proposed Action would not result in significant positive nor significant adverse impacts to safety on, or in the vicinity of, NAS Fort Worth JRB. There would be no impact to safety associated with the proposed renovation and/or use of workspace at B-1651 and B-1653. OSHA requirements would be followed for any asbestos or lead-based paint disturbance, and any materials encountered would be handled and disposed in accordance with federal and state regulations and applicable NAS Fort Worth JRB waste management plans. There would be an insignificant adverse impact to safety associated with the storage, handling, and transportation of EOD-related explosives. The proposed ARMAG and all handling of explosives would comply with AFMAN 91-201 (USAF, 2011). The ARMAG would store a maximum of 30-pounds NEW of HD 1.1 explosives and would have a QD arc distance of 10 ft when the door is closed. When the door is open, there would be a 50-ft arc at an approximately 70^{o} angle out from the open door. The ARMAG would be constructed with a 30-ft clear zone enclosed by a security fence. An additional 20-ft clear zone would extend beyond the fence. The 50-ft QD arc when the ARMAG door is open would be completely encompassed by the clear zones. The ARMAG would be equipped with a lightning protection system, intrusion detection system, security pole and lighting, landline communications, and a fire extinguisher.

EOD-related explosives would be transported from suppliers to NAS Fort Worth JRB, between EOD facilities on the installation, and to the installation from off-installation locations during an explosive hazard emergency response. All on-base transportation of EOD-related explosives would comply with AFMAN 91-201 (USAF, 2011). Off-base transportation of EOD-related explosives would comply with 49 CFR, as prescribed by AFMAN 91-201 and associated DoD directives referenced therein, in addition to all applicable local and state regulations. The aforementioned QD criteria do not apply to explosive materials during transport. However, in accordance with AFMAN 91-201, necessary precautions would be taken to minimize the exposure of people and property during transportation, and transportation would be limited to the minimum time necessary to complete the task. The EOD Flight at NAS Fort Worth JRB would receive one shipment of explosives per year which would arrive via ground transportation. EOD operations at this location would be relocated to the Permanent EOD Facility following its completion.

EOD Proficiency Range: Implementation of the Proposed Action would not result in significant positive nor significant adverse impacts to safety on, or in the vicinity of, NAS Fort Worth JRB. There would be an insignificant adverse impact to safety associated with the storage, handling, and transportation of EOD-related explosives and the routine EOD operations conducted at the EOD Proficiency Range. The storage, handling, and transportation of explosives would occur as described for the EOD Temporary Operations Facility. The proposed ARMAG would be identical to the temporary ARMAG proposed for the EOD Temporary Operations Facility with the following exceptions: an intrusion detection system would not be required because the ARMAG would only store explosives while the EOD Proficiency Range is in use; and a flagpole would be erected adjacent to the ARMAG to indicate when the range is in use. The site would be managed in accordance with the Bird/Air Strike Hazard Reduction Plan (NAS Fort Worth JRB, 2004a).

The design and operation of the EOD Proficiency Range would comply with Sections 12.75 and 12.76 of the AFMAN 91-201 (USAF, 2011). A 300-foot radius clear zone would be required around the detonation point to accommodate a maximum of 2.5-lbs NEW of HD 1.1 explosives. Detonations would likely be heard and felt beyond the 300-foot clear zone, but potential safety risks to personnel and/or structures would be minimal. No fragmentary munitions or shape charges would be used because of the proximity to taxiways and the runway. An additional area within the 300-foot clear zone would be sited for build-up of explosive initiators in accordance with AFMAN 91-201.

EOD Practical Training Area: Implementation of the Proposed Action would not result in significant positive nor significant adverse impacts to safety on, or in the vicinity of, NAS Fort Worth JRB. There would be an insignificant adverse impact to safety associated with the storage, handling, and transportation of EOD related explosives and the routine EOD operations conducted at the EOD Practical Training Area. The storage, handling, and transportation of explosives would occur as described for the EOD Temporary Operations Facility. The proposed ARMAG would be identical to the temporary ARMAG proposed for the EOD Temporary Operations Facility except that construction at this location. The US Navy MWD section also plans to construct a K9 Explosive Training Aid Storage Magazine at this location in the future.

The training area would encompass approximately four ac and would have privacy fencing to preclude outside personnel from viewing EOD-specific TTPs. The EOD Practical Training Area would accommodate EOD training scenarios using up to 0.051-lbs NEW of HD 1.4 explosives (i.e., smokeless powder) and all activities would comply with AFMAN 91-201. Detonations would likely be heard and possibly felt beyond the confines of the training area, but potential safety risks to personnel and/or structures would be minimal.

The future construction of the proposed Permanent EOD Facility at this location would not impact safety on, or in the vicinity of, NAS Fort Worth JRB. The Permanent EOD Facility would be constructed to meet the standards set forth in AFH 32-1084 and AFRCH 32-1001. All EOD operations previously described for the Temporary Operations Facility would be relocated to the Permanent EOD Facility following its completion.

3.8 CUMULATIVE AND ADVERSE IMPACTS

3.8.1 Unavoidable Adverse Impacts

Implementation of the Proposed Action would result in unavoidable, negligible or minor effects on storm water, air quality, solid waste, hazardous materials, and insignificant adverse impacts to the noise environment from construction activities. EOD operations would result in unavoidable, minor effects on surface water quality, flood plains, storm water, air quality, solid waste, hazardous materials, and safety and insignificant adverse impacts on the noise environment. There would be minor increases in storm water runoff from impervious surfaces and air emissions from explosive detonations, construction equipment and vehicle operation. There would be a minor, unavoidable increase in solid waste generation, and a small increase in the use of hazardous materials. EOD operations would unavoidably contribute to the noise environment on and adjacent to the installation. There would be unavoidably increased safety risk associated with the transportation, handling, and storage of explosive materials. None of these unavoidable effects would be significant. The local presence of the EOD Flight would result in a beneficial effect on safety through the ability to respond more quickly to munitions-related hazardous events.

3.8.2 Analysis of Cumulative Impacts

Council on Environmental Quality regulations stipulate that potential environmental impacts resulting from cumulative effects should be considered in the EA. A cumulative impact is the impact on the environment which results from the incremental effects of an action when added to the effects of other past, present, and reasonably foreseeable future actions. In accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed, currently under construction, recently completed, or anticipated to be implemented in the near future is presented below.

Recently completed, ongoing, and proposed military construction (MILCON) and operations and maintenance (O&M) projects were reviewed in order to determine the potential for cumulative effects from these actions and the Proposed Action. The time frame considered was 2008 to 2017. Minor cumulative effects on the air quality, solid waste, hazardous materials, the noise environment and related land uses, and safety would be expected on, and in the immediate vicinity of, NAS Fort Worth JRB. Effects of the Proposed Action would result in minor incremental increases in storm water runoff, air pollutant emissions, minor increases in solid and hazardous waste generation, insignificant increases in noise levels on and off the installation, and increased risk from the transport, handling, and storage of munitions, and, when considered in relation to effects from past, present, and reasonably foreseeable future actions would not create significant adverse cumulative effects. Beneficial cumulative effects on the economy and safety would be expected from the purchase of goods and services in the local community, and safety would be increased from the presence of a local EOD Flight that could respond quickly to military munitions emergencies on and off the installation. Cumulative impacts are not expected from the incremental effects of these actions on other environmental resources.

3.8.3 Irreversible and Irretrievable Commitments of Resources

Implementation of the Proposed Action would result in the irreversible consumption of resources used in the construction and operation of the various EOD facilities. Resources consumed as part of the Proposed Action may include: energy resources; material resources; land resources; and human labor resources. Consumption of these resources would be small and would not significantly decrease their availability nor significantly increase their demand on, or in the vicinity of, NAS Fort Worth JRB. Implementation of the Proposed Action would result in the long-term, but reversible commitment of Air Force land resources for the length of the EOD mission at NAS Fort Worth JRB. Therefore, the commitments of resources would not be significant.

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6.0 REFERENCES

Council on Environmental Quality (CEQ). 2010. *Memorandum for Heads of Federal Departments and Agencies. Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions*. February 18, 2010.

Department of Defense (DoD). 2008. *DoD Manual 6055.09-M, DoD Ammunition and Explosives Safety Standards*. Administratively reissued 4 August 2010.

Federal Emergency Management Agency (FEMA). 2009. *Flood Insurance Rate Map Number 48439C01705, Panel 170*. Revised September 25.

Fort Richardson. 2010. *Resumption of Year-Round Firing Opportunities at Fort Richardson, AK* Draft Environmental Impact Statement.

Naval Air Station Fort Worth Joint Reserve Base (NAS Fort Worth JRB).

2011a. *Summary of Data for the Texas Commission on Environmental Quality 2010 Emission Inventory Questionnaire for Naval Air Station Joint Reserve Base Fort Worth, Texas.* March.

2011b. *The Military Community Planning Interface*. Presented at the Third Annual Elected Officials Briefing, 28 September. Available at http://www.nctcog.org/trans/aviation/jlus/2011ElectedOfficialsBriefing09282011.pdf. Accessed 3 October 2011.

2010. *Master Plan*. October.

2007. *Stormwater Pollution Prevention Plan*. July

2004a. *Integrated Natural Resources Management Plan*. May.

2004b. *Integrated Cultural Resources Management Plan*. May.

Naval Air Station Whidbey Island (NAS Whidbey Island). 2000. *Relocation of the Explosive Ordnance Disposal Demolition Training Range* Environmental Assessment. Oak Harbor, WA.

North Central Texas Council of Governments (NCTCOG). 2008. *Joint Land Use Study*. March.

Pater, L.L. 1976. *Noise abatement program for explosive operations at NSWC/DL*. Presented at the 17th Explosives Safety Seminar of the DoD Explosives Safety Board.

Pater, L.L, E.T. Nykaza, G. Luz, A. Atchley, K. Hodgdon, R. Baumgartner, and P. Rathbun. 2007. *An investigation of community attitudes toward blast noise: Methodology*. ERDC/CERL SR-07-24, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

Pennington, J.C., T.F. Jenkins, J.M. Brannon, J. Lynch, T.A. Ranney, T.E. Berry Jr., C.A. Hayes, P.H. Miyares, M.E. Walsh, A.D. Hewitt, N. Perron, and J.J. Delfino. 2001. *Distribution*

and fate of energetics on DoD test and training ranges: Interim Report 1. ERDC TR-01-13, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

Swearingen, M.E., D.G. Albert, and D. Valente. 2011. *Turning KA-BOOM! into ka-boom*. Presented at the meeting of the Acoustical Society of America, May 23. Available at http://www.aip.org/asa_laypapers2011/Swearingen.html. Accessed 4 November 2011.

United States Air Force (USAF). 2011. *Air Force Manual 91-201, Explosives Safety Standards*. January.

United States Army (US Army).

2007. *Environmental Protection and Enhancement*. Army Regulation 200-1. U.S. Army Headquarters, Washington, DC.

2003. *Range Safety*. Army Pamphlet 385-63. US Army Headquarters, Washington, DC.

United States Army Center for Health Promotion and Preventive Medicine (USACHPPM). 2003. *BNOISE2 Large Arms Noise Assessment Model*. Version 1.3. Developed by USACHPPM Construction and Engineering Research Laboratory (CERL).

United States Environmental Protection Agency (USEPA).

2011a. *Nonattainment Status for Each County by Year for Texas Including Previous 1-Hour Ozone Counties*. Available at http://www.epa.gov/oaqps001/greenbk/anayo_tx.html. Accessed 3 October 2011.

2011b. *National Ambient Air Quality Standards (NAAQS)*. Available at http://www.epa.gov/air/criteria.html. Accessed 5 October 2011.

2009. *County Air Quality Report – Criteria Air Pollutants*. Data extracted from the Air Quality System on 10 January 2009. Available at http://iaspub.epa.gov/airsdata/ADAQS.summary?geotype=st&geocode=TX&geoinfo=st~TX~Texas&pol=&year=2008&exc=0&fld=county&fld=stabbr&fld=regn&rpp=25&page=2&sort=a14&fmt=#disclaimer. Accessed 5 October 2011.

1995. *Compilation of Air Pollutant Emission Factors, Volume 1: Stationary Point and Area Sources* (AP-42, Fifth Edition). January (as updated).

United States Navy (US Navy).

2007. *Environmental Readiness Program Manual*. October.

2003. *Ammunition and Explosives Safety Ashore. NAVSEA OP 5, Volume 1, Seventh Edition. Revised March 1.*

APPENDICES

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APPENDIX A

APPLICABLE LAWS, REGULATIONS, POLICIES, AND PLANNING CRITERIA

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In addition to the National Environmental Policy Act (NEPA) of 1969 (as amended, PL 91-190; 42 USC 4321 *et seq*.), other potentially relevant federal laws, regulations, policies, and planning criteria that are considered in evaluating the environmental consequences of a federal action during the Environmental Impact Analysis Process (EIAP) are listed below. This list summarizes potentially relevant federal laws, regulations, and policies, but is not a complete list; relevant state and local laws and criteria also are considered in the analysis.

Federal Laws

- Aquatic Nuisance Prevention and Control Act (16 USC 4701-4751)
- Archaeological and Historic Preservation Act of 1974 (PL 93-291; 16 USC 469 *et seq*)
- Archaeological Resources Protection Act of 1979 (PL 96-95; 16 USC 470aa-11)
- Bald Eagle Protection Act (PL 86-70, as amended)
- Clean Air Act of 1970, and amendments
- Clean Water Act of 1978
- Endangered Species Act of 1973 (PL 95-632, as amended)
- Federal Land Policy and Management Act of 1976 (PL 94-579)
- Fish and Wildlife Conservation Act of 1980 (PL 96-366; 16 USC 2901)
- Fish and Wildlife Coordination Act (PL 85-624)
- Fish and Wildlife Conservation and Natural Resource Management Programs in Military Reservations (PL 96-561; amends PL 86-797 [Sikes Act])
- Migratory Bird Conservation Act (Ch. 257, 45 Stat. 1222; 16 USC 715 *et seq.*)
- Migratory Bird Treaty Act (PL 65-186; 16 USC 703 *et seq.*)
- National Historic Preservation Act of 1966 (as amended, PL 89-665; 16 USC 470 *et seq*.)
- Native American Graves Protection and Repatriation Act (25 USC, Section 3001 *et seq*.)
- Noxious Plant Control (PL 90-583)
- Outdoor Recreation on Federal Lands (16 USC 4601-1)
- Plant Protection Act of 2000 (replaces Noxious Weed Act of 1973 [PL 93-692])
- Resource Conservation and Recovery Act of 1976
- Sikes Act Improvement Amendments of 1997 (PL 105-85, as amended; USC Title 16)
- Soil and Water Resource Conservation Act (16 USC 2001 *et seq*.)
- Superfund Amendments and Reauthorization Act of 1986
- Toxic Substance Control Act of 1976
- Watershed Protection and Flood Prevention Act (PL 92419; 68 Stat. 666, as amended and 86 Stat. 667; 16 USC 1001)

Presidential Executive Orders (EO)

- EO 11593 Protection and Enhancement of the Cultural Environment
- EO 11988 Floodplain Management
- EO 11991 Protection and Enhancement of Environmental Quality (amends EO 11514)
- EO 12375 Intergovernmental Review of Federal Programs
- EO 12608 Protection of Wetlands (amends EO 11990)
- EO 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- EO 13007 Indian Sacred Sites
- EO 13112 Invasive Species
- EO 13175 Consultation and Coordination with Indian Tribal Governments
- EO 13287 Preserve America
- EO 13186 Conservation of Migratory Birds

- EO 13423 Strengthening Federal Environmental, Energy, and Transportation Management
- EO 13514 Federal Leadership in Environmental, Energy, and Economic Performance

Department of Defense Directives (DoDD) and Instructions (DoDI)
- DoDD 4165.61 Intergovernmental Coordination of DoD Federal Development Programs and Activities
- DoD Manual 6055.09-M DoD Ammunition and Explosives Safety Standards

Air Force Policy Directives (AFPD), Instructions (AFI), and Manuals (AFMAN)
- AFPD 91-2 Safety Programs DoD Ammunition and Explosives Safety Standards
- AFPD 91-3 Occupational Safety and Health
- AFPD 32-70 Environmental Quality
- AFI 32-3001 Explosive Ordnance Disposal Program
- AFI 32-7060 Interagency and Intergovernmental Coordination for Environmental Planning
- AFI 91-301 Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program
- AFI 32-7061 Environmental Impact Analysis Process
- AFMAN 91-201 Explosives Safety Standards

Navy Technical Manuals
- NAVSEA OP 5 Ammunition and Explosives Safety Ashore

APPENDIX B

AGENCY/PUBLIC CORRESPONDENCE

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MEMORANDUM FOR DISTRIBUTION 24 Oct 11

FROM: 301 MSG/CEV
1215 Military Parkway
NAS Fort Worth JRB, Texas 76127-6200

SUBJECT: Solicitation of input into the preparation of an Environmental Assessment (EA) for the stand-up for an Explosive Ordnance Disposal (EOD) Unit at NAS Fort Worth JRB, Texas.

1. The Air Force Reserve Command (AFRC) has gained manpower authorizations to increase AFRC's ability to address current and emerging missions. The 301st Fighter Wing (301 FW) Mission Support Group/Civil Engineer (301 MSG/CEV) Environmental Department is preparing an EA to address the stand-up of a new EOD Unit assigned to the 301st Civil Engineer Squadron (301 CES) at NAS Fort Worth JRB, Texas. The Proposed Action brings 14 EOD personnel authorizations to NAS Fort Worth JRB. Under the Proposed Action, space in Building 1651 (B-1651) would be used for the initial office and work space for proposed EOD functions. There would be immediate renovations to a portion of building 1653 to house EOD operations; an Advanced EOD Storage Magazine (ARMAG) would be placed near building1653 on Hensley Avenue. An EOD Proficiency Range would be located between Taxiway A 194 and Parallel Taxiway 197 northwest of building 4160; an ARMAG would be placed on existing pavement to the south of the range. An EOD Practical Training Area and permanent ARMAG would be located near building 1344, and a Permanent EOD Facility would be constructed within the confines of the training area in the future.

2. The Air Force Environmental Impact Analysis Process (EIAP) for the Proposed Action and appropriate alternatives is being conducted in accordance with the Council on Environmental Quality (CEQ) guidelines for satisfying requirements of the National Environmental Policy Act (NEPA) of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached Description of Proposed Action and Alternatives (DOPAA) and solicit your comments concerning the Proposed Action and any potential environmental issues or concerns.

3. Please provide comments or other relevant information directly to Mr. Randy Varner, 301 MSG/CEV Environmental Department (N45), 1215 Military Parkway, NAS Fort Worth JRB, Texas 76127-6200 by 23 Nov 11.

4. Any questions concerning the Proposed Action should be directed to Mr. Varner at the above address.

R Varner

Randy Varner
Environmental Department Chief

Attachments:
(1) Description of Proposed Action and Alternatives
(2) Distribution List

IICEP Distribution List

Federal

Cathy Gilmore
Regional NEPA Coordinator
USEPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202

NEPA Program Coordinator
Arlington, Texas Ecological Services
Field Office
U.S. Fish and Wildlife Services
2005 Green Oaks Boulevard, Suite 140
Arlington, TX 76006

Dan Deerinwater
Regional Director
Southern Plains Regional Office
Bureau of Indian Affairs
WCD Office Complex
P.O. Box 368
Anadarko, OK 73005

State

Tobey Baker
NEPA State Single Point of Contact
Budget Planning and Policy Office
1100 San Jacinto
Austin, TX 78701

Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
1511 Colorado
Austin, TX 78701

Local

Director of Environment and Development
North Central Texas Council of
Governments
616 Six Flags Drive, Suite 200
Arlington, TX 76011

Tribal

Stratford Williams
President
Wichita and Affiliated Tribes
Highway 281
P.O. Box 729
Anadarko, OK 73005

Louis Maynahonah
Chairman
Apache Tribe of Oklahoma
P.O. Box 1220
Anadarko, OK 73005

Robert Cast
Tribal Historic Preservation Officer
Caddo Nation
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Binger, OK 73009

Jimmy Arterberry
Tribal Historic Preservation Officer
Comanche Nation of Oklahoma
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Lawton, OK 73502

Kerry Holton
President
Delaware Tribe of West Oklahoma
P.O. Box 825
Anadarko, OK 73005

Donald Tofpi
Chairman
Kiowa Tribe of Oklahoma
P.O. Box 369
Carnegie, OK 73015

Henryetta Ellis
Tribal Historic Preservation Officer
Absentee Shawnee Tribe of Oklahoma
2025 S. Gordon Cooper Drive
Shawnee, OK 74801

Tribal (con't.)

Terry Cole
Tribal Historic Preservation Officer
Choctaw Nation of Oklahoma
P.O. Drawer 1210
Durant, OK 74702

Carlos Bullock
Chairman
Alabama-Coushatta Tribe of Texas
571 State Park Road
Livingston, TX 77351

Juan Garza, Jr.
Chairman
Kickapoo Traditional Tribe of Texas
HC 1 Box 9700
Eagle Pass, TX 78852

Earl J. Barbry, Jr.
Tribal Historic Preservation Officer
Tunica-Biloxi Tribe
P.O. Box 1589
Markesville, LA 71351

Ted Isham
Tribal Historic Preservation Officer
Muscogee (Creek) Nation
P.O. Box 580
Ocmulgee, OK 74447

Donald Patterson
President
Tonkawa Tribe of Oklahoma
1 Rush Buffalo Road
Tonkawa, OK 74653

TRADITIONAL COUNCIL

CHAIRMAN
Juan Garza, Jr., Kisisika

SECRETARY
Jesus Anico, Chakodata

TREASURER
Rogelio Elizondo, Apichicuea

MEMBERS
David J. Gonzalez, Kikekideah
Nanate Hernandez, Nanatea

KICKAPOO

TRADITIONAL TRIBE OF TEXAS

HCR 1 Box 9700
Eagle Pass, Texas 78852

Traditional Council

November 30, 2011

Randy Varner, Chief
301 MSG/CEV
Environmental Department (N45)
1215 Military Parkway
NAS Fort Worth JRB, TX 76127-6200

Re: Solicitation of input into the preparation of an Environmental Assessment (EA) for the stand-up for an Explosive Ordinance Disposal (EOD) Unit at NAS Fort Worth JRB, Texas

Dear Sir:

Thank you for your letter dated October 28, 2011, regarding solicitation of input into the preparation of an Environmental Assessment (EA) for the stand-up for an Explosive Ordinance Disposal (EOD) Unit at NAS Fort Worth JRB, Texas.

Thank you for advising us about the proposed action. The Kickapoo Nation values its traditions and customs so we appreciate your taking the time to ask for our input in this matter. By keeping the lines of communication open we can peacefully co-exist yet attend to our respective businesses.

We do not have any objection or opposition to your project as we are unaware of any tribal sites in this area, therefore it does not affect our interests in any way. The Kickapoo Traditional Tribe of Texas wishes you success in your endeavor.

Should you have any further questions or comments, please do not hesitate to contact us.

Juan Garza, Jr., Chairman

PUBLIC NOTICE

Notice of Availability

Finding of No Significant Impact (FONSI) and Environmental Assessment (EA) for Stand-Up of the 301st Fighter Wing (301 FW) Explosive Ordnance Disposal (EOD) Unit

Naval Air Station (NAS) Fort Worth Joint Reserve Base (JRB), Texas – An EA for the stand-up of the 301 FW EOD Flight at NAS Fort Worth JRB is being prepared. Stand-up of the EOD Flight comprised of 6 Active/Guard and 8 Traditional Reservists would require building renovation/construction for office, work space and EOD operations; development of a Proficiency Range and Practical Training Range; and siting of two Advanced EOD Storage Magazines (ARMAGs).

The U.S. Air Force Reserve Command (AFRC) and 301 FW propose to issue a FONSI based on the EA. Potential environmental consequences of the Proposed Action were analyzed in detail. Findings of the analysis indicate that the Proposed Action would not have a significant impact on the natural or human environment, and that an Environmental Impact Statement (EIS) is not required for this action.

Copies of the Draft FONSI and EA are available for review at the White Settlement, River Oaks, and Fort Worth Ridglea Branch Libraries. Public comments on the documents will be accepted through 14 Mar 2012. Comments or inquiries may be submitted in writing directly to Mr. Randy Varner, 301 MSG/CEV Environmental Department (N45), 1215 Military Parkway, NAS Fort Worth JRB, TX 76127-6200.

February 23, 2012

Randy Varner
Environmental Department Chief
301 MSG/CEV
1215 Military Parkway
NAS Fort Worth JRB, Texas 76127-6200

Re: Request for Review of Draft Environmental Assessment (EA) – Standup of Explosive Ordnance Disposal at NAS Fort Worth JRB, (Tarrant County, Texas)

Dear Mr. Varner:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC).

Our review staff, led by Mr. William McWhorter, has reviewed the above mentioned consultation from your office and regarding the Proposed Action/Preferred Alternative & its assessment (i.e. p. 7 & p. 18) agrees with your assessment that **No Historic Properties Affected**.

Thank you for your cooperation in this state and federal review process, and for your efforts to preserve the irreplaceable heritage of Texas. If you have any questions concerning our review or if we may be of further assistance, please contact Mr. William McWhorter at 512/463-5833.

Sincerely,

William McWhorter

for
Mark Wolfe,
Executive Director

APPENDIX C

NOISE ANALYSIS DOCUMENTATION

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Location:

Proposed EOD Proficiency Range

Type of Analysis:

C-Weighted Day-Night Average Sound Level

Description:

C-weighted Day-Night Average Sound Level (CDNL) noise contours were calculated using the BNOISE2 computer modeling program (USACHPPM, 2003). The calculation assumed 104 24-hour operating days per year, as appropriate for reserve bases. The EOD Proficiency Range would detonate a maximum of 2.5 pounds (lbs) Net Explosive Weight (NEW) of Hazard Division (HD) 1.1 explosives. Materials detonated at the range would likely include C4, 2,4,6-trinitrotoluene (TNT), Semtex, detonating cord, deta sheet, thermite, smokeless powder, and photoflash powder. However, information regarding the quantity or frequency of detonations for each individual material is not currently available. Training at the range would occur one day per month and would consist of between 1 and 10 individual detonations. Detonations would normally occur between 7:00am and 1:00pm on the first Saturday of each month, weather permitting.

Assumptions:

- No detonations would occur during nighttime hours (10:00pm to 7:00am). The "BN3.2 Weather Emulation" scenario was selected in BNOISE2.
- Approximately 120 detonations would occur per year.
- Each detonation would contain the maximum NEW of 2.5 lbs. of HD 1.1 explosives.
- Information is not available on the specific composition of individual detonations. Therefore, it was assumed that 50% of the detonations would consist of 2.5 lbs NEW C4 and 50% would consist of 2.5 lbs NEW TNT. For both C4 and TNT, the most similar charge available in BNOISE2 is 2.6 lbs.

BNOISE2 Model Output:

CASE_BCALC_v1.x

begin_description

#Date/Time Created: 28 Nov 2011 12:54
#Case File Name: C:\BNOISE2\Cases\11.28.11 ProCDNL1.dat
#BNOISE2 v1.3.2003-07-03

#
Receiver Grid Selection = NAS FORT WORTH JRB-NEIGHBORS
Metric Selection = DNL (104 x 24h), C WEIGHTING
Activity Selection = PROFICIENCY RANGE
Include Terrain: False
Include Land-Water: False

```
  #

  # Installation Name: NAS FORT WORTH JRB
  # Service: US AIR FORCE
  # State: TX
  # Country: USA
  # Author: GIM
  # Date Created: 27 Oct 2011
  # Date Last Modified: 28 Nov 2011

end_description


begin_bcalccommands

  # This section is for diagnostic purposes only
Draw Firing Areas: .true.
Draw Target Areas: .true.
Draw Trajectories: .true.
Draw Registration Marks: .true.
Write Annotations: .true.
Calculate Contour Grid: .true.

end_bcalccommands


begin_sound_propagation_types

Propagation Directory Name: C:\BNOISE2\support\

Propagation Type: BN3.2 DAY FOCUS
Downwind Table: noloss
Downwind Corrections: dfocus.st
Upwind Table: noloss
Upwind Corrections: dfocus.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY BASE
Downwind Table: noloss
Downwind Corrections: dbase.st
Upwind Table: noloss
Upwind Corrections: dbase.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: dneg.st
Upwind Table: noloss
Upwind Corrections: dneg.st
```

```
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY EXCESS NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: dexneg.st
Upwind Table: noloss
Upwind Corrections: dexneg.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT FOCUS
Downwind Table: noloss
Downwind Corrections: nfocus.st
Upwind Table: noloss
Upwind Corrections: nfocus.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT BASE
Downwind Table: noloss
Downwind Corrections: nbase.st
Upwind Table: noloss
Upwind Corrections: nbase.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: nneg.st
Upwind Table: noloss
Upwind Corrections: nneg.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT EXCESS NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: nexneg.st
Upwind Table: noloss
Upwind Corrections: nexneg.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999


end_sound_propagation_types


begin_propagation_occurrence_by_azimuth

Propagation Type: BN3.2 DAY FOCUS
Propagation Azimuth (deg): 0
```

Daytime Occurrence (pct): 5
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY BASE
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 25.4
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 40.8
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY EXCESS NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 28.8
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT FOCUS
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 5.6
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT BASE
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 33.9
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 28.8
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT EXCESS NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 32

```
  # Date Created: 9 Aug 1999
  # Date Last Modified: 9 Aug 1999


end_propagation_occurrence_by_azimuth


begin_receivergrid

Receiver Grid Name: NAS FORT WORTH JRB-NEIGHBORS
UTM Zone: 14
SW Corner Easting: 637870.00
SW Corner Northing: 3618368.00
EW Overall Size: 20000
NS Overall Size: 20000
Mesh Spacing: 20
  # Installation Name: NAS FORT WORTH JRB
  # Service: US AIR FORCE
  # State: TX
  # Country: USA
  # Author: GIM
  # Date Created: 27 Oct 2011
  # Date Last Modified: 31 Oct 2011

end_receivergrid


begin_maps

  #Land-Water XYW Map File Name: None
  #Terrain XYZ Map File Name: None

end_maps


begin_firingareas

Firing Area Name: PROFICIENCY RANGE_POINT_POINT
UTM Zone: 14
East1: 646461.00
North1: 3628335.00
Percent1: 100.00
Elevation: 188.00
  # Easting: 646461.00
  # Northing: 3628335.00
  # EastWest Size: 0.00
  # NorthSouth Size: 0.00
  # Azimuth: 0.00
  # Installation Name: NAS FORT WORTH JRB
  # Service: US AIR FORCE
  # State: TX
```

```
 # Country: USA
 # Author: GIM
 # Date Created: 27 Oct 2011
 # Date Last Modified: 27 Oct 2011

end_firingareas


begin_targetareas

end_targetareas


begin_equivalentyields

Equivalent Yield Name: COMPOSITION C-4
Pressure Equivalent TNT Multiple: 1.3700
Impulse Equivalent TNT Multiple: 1.1900
 # Description: M.M. Swisdak NSWC TR-75-116; ANSI S2.20-1983
 # Date Created: 1 Jan 1998
 # Date Last Modified: 1 Jan 1998

Equivalent Yield Name: TNT
Pressure Equivalent TNT Multiple: 1.0000
Impulse Equivalent TNT Multiple: 1.0000
 # Description: M.M. Swisdak NSWC TR-75-116; ANSI S2.20-1983
 # Date Created: 1 Jan 1998
 # Date Last Modified: 1 Jan 1998

end_equivalentyields


begin_cselacousticefficiencies

end_cselacousticefficiencies


begin_directivityspectra

end_directivityspectra


begin_cseldirectivities

end_cseldirectivities


begin_noisesources

Noise Source Code: EC422
Weapon Class: EXPLOSIVE
```

```
  # Weapon Type: EXPLOSIVE
  # Weapon: COMPOSITION C-4
  # Charge Increment: 1.2 KG (2.6 LBS)
Explosive Charge Weight (kg): 1.2000
  # Charge Increment Description:
Equivalent Yield: COMPOSITION C-4

Noise Source Code: ETN22
Weapon Class: EXPLOSIVE
  # Weapon Type: EXPLOSIVE
  # Weapon: TNT
  # Charge Increment: 1.2 KG (2.6 LBS)
Explosive Charge Weight (kg): 1.2000
  # Charge Increment Description:
Equivalent Yield: TNT

end_noisesources


begin_activitydetails

Detail Record Number: 1
Firing Area: PROFICIENCY RANGE_POINT_POINT
Firing Noise Source: EC422
Firing Height: 1.00
Target Area:
  # This Acitivty Detail uses no Target Area
Number of Day Shots: 120.00000000
Number of Night Shots: 0.00000000
  # Activity Detail Date:
  # Activity Detail Description:
  # Date Created: 27 Oct 2011
  # Date Last Modified: 28 Nov 2011

Detail Record Number: 2
Firing Area: PROFICIENCY RANGE_POINT_POINT
Firing Noise Source: ETN22
Firing Height: 1.00
Target Area:
  # This Acitivty Detail uses no Target Area
Number of Day Shots: 120.00000000
Number of Night Shots: 0.00000000
  # Activity Detail Date:
  # Activity Detail Description:
  # Date Created: 28 Oct 2011
  # Date Last Modified: 28 Nov 2011

end_activitydetails


begin_frequencyweighting
```

Frequency Weighting Name: C WEIGHTING
Band 0: -45.30
Band 1: -42.20
Band 2: -39.10
Band 3: -36.00
Band 4: -32.90
Band 5: -29.80
Band 6: -26.70
Band 7: -23.60
Band 8: -20.50
Band 9: -17.40
Band 10: -14.30
Band 11: -11.20
Band 12: -8.50
Band 13: -6.20
Band 14: -4.40
Band 15: -3.00
Band 16: -2.00
Band 17: -1.30
Band 18: -0.80
Band 19: -0.50
Band 20: -0.30
Band 21: -0.20
Band 22: -0.10
Band 23: 0.00
Band 24: 0.00
Band 25: 0.00
Band 26: 0.00
Band 27: 0.00
Band 28: 0.00
Band 29: 0.00
Band 30: 0.00
Band 31: 0.00
Band 32: -0.10
Band 33: -0.20
Band 34: -0.30
Band 35: -0.50
Band 36: -0.80
Band 37: -1.30
Band 38: -2.00
Band 39: -3.00
Band 40: -4.40
Band 41: -6.20
Band 42: -8.50
Band 43: -11.20

end_frequencyweighting

begin_metrics

Metric Name: DNL (104 x 24h)
Frequency Weighting: C WEIGHTING
Contour Metric: DNL
Silence Threshold: 65.00
Assessment Period (h): 2496
Date Created: 24 May 2000
Date Last Modified: 24 May 2000

end_metrics

Location:

Proposed EOD Proficiency Range

Type of Analysis:

Peak Noise Level

Description:

The BNOISE2 computer modeling program to assess the peak noise associated with single detonation events. Peak noise levels were calculated for PK15(met), PK50(met), and PK90(met) with unweighted decibels (dBPs). The EOD Proficiency Range would detonate a maximum of 2.5 lbs NEW of HD 1.1 explosives. Materials detonated at the range would likely include C4, TNT, Semtex, detonating cord, deta sheet, thermite, smokeless powder, and photoflash powder. However, information regarding the quantity or frequency of detonations for each individual material is not currently available. Training at the range would occur one day per month and would consist of between 1 and 10 individual detonations. Detonations would normally occur between 7:00am and 1:00pm on the first Saturday of each month, weather permitting.

Assumptions:

- Single-event peak noise levels were determined using the loudest explosive material (i.e., C4) and greatest NEW (i.e., 2.5 lbs) proposed for use at the EOD Proficiency Range. The most equivalent C4 charge available in BNOISE2 is 2.6 lbs, and thus exceeds the maximum case scenario under the Proposed Action.
- No detonations would occur during nighttime hours (10:00pm to 7:00am). The "BN3.2 Weather Emulation" scenario was selected in BNOISE2.

BNOISE2 Model Output:

The output provided below is from the PK15(met) model run. Although not provided here, model runs were also conducted for PK50(met) and PK90(met), and the output from these runs would be identical except for the metric selection.

CASE_BCALC_v1.x

begin_description

#Date/Time Created: 28 Nov 2011 14:31
#Case File Name: C:\BNOISE2\Cases\11.28.11 ProPeak1.dat
#BNOISE2 v1.3.2003-07-03

#
Receiver Grid Selection = NAS FORT WORTH JRB-NEIGHBORS
Metric Selection = PK, 15, NO WEIGHTING
Activity Selection = PRO RANGE PEAK
Include Terrain: False

```
  # Include Land-Water: False
  #

  # Installation Name: NAS FORT WORTH JRB
  # Service: US AIR FORCE
  # State: TX
  # Country: USA
  # Author: GIM
  # Date Created: 31 Oct 2011
  # Date Last Modified: 28 Nov 2011

end_description


begin_bcalccommands

  # This section is for diagnostic purposes only
Draw Firing Areas: .true.
Draw Target Areas: .true.
Draw Trajectories: .true.
Draw Registration Marks: .true.
Write Annotations: .true.
Calculate Contour Grid: .true.

end_bcalccommands


begin_sound_propagation_types

Propagation Directory Name: C:\BNOISE2\support\

Propagation Type: BN3.2 DAY FOCUS
Downwind Table: noloss
Downwind Corrections: dfocus.st
Upwind Table: noloss
Upwind Corrections: dfocus.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY BASE
Downwind Table: noloss
Downwind Corrections: dbase.st
Upwind Table: noloss
Upwind Corrections: dbase.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: dneg.st
Upwind Table: noloss
```

Upwind Corrections: dneg.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY EXCESS NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: dexneg.st
Upwind Table: noloss
Upwind Corrections: dexneg.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT FOCUS
Downwind Table: noloss
Downwind Corrections: nfocus.st
Upwind Table: noloss
Upwind Corrections: nfocus.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT BASE
Downwind Table: noloss
Downwind Corrections: nbase.st
Upwind Table: noloss
Upwind Corrections: nbase.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: nneg.st
Upwind Table: noloss
Upwind Corrections: nneg.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT EXCESS NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: nexneg.st
Upwind Table: noloss
Upwind Corrections: nexneg.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

end_sound_propagation_types

begin_propagation_occurrence_by_azimuth

Propagation Type: BN3.2 DAY FOCUS

Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 5
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY BASE
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 25.4
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 40.8
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY EXCESS NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 28.8
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT FOCUS
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 5.6
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT BASE
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 33.9
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 28.8
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT EXCESS NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0

Nighttime Occurrence (pct): 32
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

end_propagation_occurrence_by_azimuth

begin_receivergrid

Receiver Grid Name: NAS FORT WORTH JRB-NEIGHBORS
UTM Zone: 14
SW Corner Easting: 637870.00
SW Corner Northing: 3618368.00
EW Overall Size: 20000
NS Overall Size: 20000
Mesh Spacing: 20
Installation Name: NAS FORT WORTH JRB
Service: US AIR FORCE
State: TX
Country: USA
Author: GIM
Date Created: 27 Oct 2011
Date Last Modified: 31 Oct 2011

end_receivergrid

begin_maps

#Land-Water XYW Map File Name: None
#Terrain XYZ Map File Name: None

end_maps

begin_firingareas

Firing Area Name: PROFICIENCY RANGE_POINT_POINT
UTM Zone: 14
East1: 646461.00
North1: 3628335.00
Percent1: 100.00
Elevation: 188.00
Easting: 646461.00
Northing: 3628335.00
EastWest Size: 0.00
NorthSouth Size: 0.00
Azimuth: 0.00
Installation Name: NAS FORT WORTH JRB
Service: US AIR FORCE

```
  # State: TX
  # Country: USA
  # Author: GIM
  # Date Created: 27 Oct 2011
  # Date Last Modified: 27 Oct 2011

end_firingareas


begin_targetareas

end_targetareas


begin_equivalentyields

Equivalent Yield Name: COMPOSITION C-4
Pressure Equivalent TNT Multiple: 1.3700
Impulse Equivalent TNT Multiple: 1.1900
  # Description: M.M. Swisdak NSWC TR-75-116; ANSI S2.20-1983
  # Date Created: 1 Jan 1998
  # Date Last Modified: 1 Jan 1998

end_equivalentyields


begin_cselacousticefficiencies

end_cselacousticefficiencies


begin_directivityspectra

end_directivityspectra


begin_cseldirectivities

end_cseldirectivities


begin_noisesources

Noise Source Code: EC422
Weapon Class: EXPLOSIVE
  # Weapon Type: EXPLOSIVE
  # Weapon: COMPOSITION C-4
  # Charge Increment: 1.2 KG (2.6 LBS)
Explosive Charge Weight (kg): 1.2000
  # Charge Increment Description:
Equivalent Yield: COMPOSITION C-4
```

end_noisesources

begin_activitydetails

Detail Record Number: 1
Firing Area: PROFICIENCY RANGE_POINT_POINT
Firing Noise Source: EC422
Firing Height: 1.00
Target Area:
This Acitivty Detail uses no Target Area
Number of Day Shots: 1.00000000
Number of Night Shots: 0.00000000
Activity Detail Date:
Activity Detail Description:
Date Created: 31 Oct 2011
Date Last Modified: 31 Oct 2011

end_activitydetails

begin_frequencyweighting

Frequency Weighting Name: NO WEIGHTING
Band 0: 0.00
Band 1: 0.00
Band 2: 0.00
Band 3: 0.00
Band 4: 0.00
Band 5: 0.00
Band 6: 0.00
Band 7: 0.00
Band 8: 0.00
Band 9: 0.00
Band 10: 0.00
Band 11: 0.00
Band 12: 0.00
Band 13: 0.00
Band 14: 0.00
Band 15: 0.00
Band 16: 0.00
Band 17: 0.00
Band 18: 0.00
Band 19: 0.00
Band 20: 0.00
Band 21: 0.00
Band 22: 0.00
Band 23: 0.00
Band 24: 0.00
Band 25: 0.00

Band 26: 0.00
Band 27: 0.00
Band 28: 0.00
Band 29: 0.00
Band 30: 0.00
Band 31: 0.00
Band 32: 0.00
Band 33: 0.00
Band 34: 0.00
Band 35: 0.00
Band 36: 0.00
Band 37: 0.00
Band 38: 0.00
Band 39: 0.00
Band 40: 0.00
Band 41: 0.00
Band 42: 0.00
Band 43: 0.00

end_frequencyweighting

begin_metrics

Metric Name: PK, 15
Frequency Weighting: NO WEIGHTING
Contour Metric: PK
Silence Threshold: 0.00
Assessment Period (h): 0.000277777813607827
Exceedance Percent (pct): 15.00
Date Created: 12 Aug 1999
Date Last Modified: 12 Aug 1999

end_metrics

Location:

Proposed EOD Practical Training Area

Type of Analysis:

C-Weighted Day-Night Average Sound Level

Description:

CDNL noise contours were calculated using the BNOISE2 computer modeling program (USACHPPM, 2003). The calculation assumed 104 24-hour operating days per year, as appropriate for reserve bases. The EOD Proficiency Range would detonate a maximum of 0.051 lbs NEW of smokeless powder. Training at the range would occur approximately two days per week (Monday – Friday) and would consist of up to two detonations per training day. Detonations would normally occur between 7:00am and 4:00pm. Nighttime training events would be identical to daytime training events and would occur up to three times per year.

Assumptions:

- Approximately 208 daytime detonations would occur per year. A total of 6 nighttime detonations would occur per year. The "BN3.2 Weather Emulation" scenario was selected in BNOISE2.
- Each detonation would contain the maximum NEW of 0.051 lbs. of HD 1.4 explosives (i.e., smokeless powder). However, smokeless powder is not included as a potential input in the BNOISE2 model. Therefore, modeling assumed 0.055 lbs of black powder per detonation.

BNOISE2 Model Output:

CASE_BCALC_v1.x

begin_description

#Date/Time Created: 28 Nov 2011 13:43
#Case File Name: C:\BNOISE2\Cases\11.28.11 TrainCDNL1.dat
#BNOISE2 v1.3.2003-07-03

#
Receiver Grid Selection = NAS FORT WORTH JRB-NEIGHBORS
Metric Selection = DNL (104 x 24h), C WEIGHTING
Activity Selection = TRAINING RANGE
Include Terrain: False
Include Land-Water: False
#

Installation Name: NAS FORT WORTH JRB
Service: US AIR FORCE
State: TX
Country: USA

```
  # Author: GIM
  # Date Created: 31 Oct 2011
  # Date Last Modified: 28 Nov 2011

end_description


begin_bcalccommands

  # This section is for diagnostic purposes only
Draw Firing Areas: .true.
Draw Target Areas: .true.
Draw Trajectories: .true.
Draw Registration Marks: .true.
Write Annotations: .true.
Calculate Contour Grid: .true.

end_bcalccommands


begin_sound_propagation_types

Propagation Directory Name: C:\BNOISE2\support\

Propagation Type: BN3.2 DAY FOCUS
Downwind Table: noloss
Downwind Corrections: dfocus.st
Upwind Table: noloss
Upwind Corrections: dfocus.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY BASE
Downwind Table: noloss
Downwind Corrections: dbase.st
Upwind Table: noloss
Upwind Corrections: dbase.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: dneg.st
Upwind Table: noloss
Upwind Corrections: dneg.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY EXCESS NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: dexneg.st
```

Upwind Table: noloss
Upwind Corrections: dexneg.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT FOCUS
Downwind Table: noloss
Downwind Corrections: nfocus.st
Upwind Table: noloss
Upwind Corrections: nfocus.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT BASE
Downwind Table: noloss
Downwind Corrections: nbase.st
Upwind Table: noloss
Upwind Corrections: nbase.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: nneg.st
Upwind Table: noloss
Upwind Corrections: nneg.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT EXCESS NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: nexneg.st
Upwind Table: noloss
Upwind Corrections: nexneg.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

end_sound_propagation_types

begin_propagation_occurrence_by_azimuth

Propagation Type: BN3.2 DAY FOCUS
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 5
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY BASE

Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 25.4
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 40.8
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY EXCESS NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 28.8
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT FOCUS
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 5.6
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT BASE
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 33.9
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 28.8
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT EXCESS NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 32
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

end_propagation_occurrence_by_azimuth

begin_receivergrid

Receiver Grid Name: NAS FORT WORTH JRB-NEIGHBORS
UTM Zone: 14
SW Corner Easting: 637870.00
SW Corner Northing: 3618368.00
EW Overall Size: 20000
NS Overall Size: 20000
Mesh Spacing: 20
 # Installation Name: NAS FORT WORTH JRB
 # Service: US AIR FORCE
 # State: TX
 # Country: USA
 # Author: GIM
 # Date Created: 27 Oct 2011
 # Date Last Modified: 31 Oct 2011

end_receivergrid

begin_maps

 #Land-Water XYW Map File Name: None
 #Terrain XYZ Map File Name: None

end_maps

begin_firingareas

Firing Area Name: TRAINING RANGE_POINT_POINT
UTM Zone: 14
East1: 648499.00
North1: 3626476.00
Percent1: 100.00
Elevation: 171.00
 # Easting: 648499.00
 # Northing: 3626476.00
 # EastWest Size: 0.00
 # NorthSouth Size: 0.00
 # Azimuth: 0.00
 # Installation Name: NAS FORT WORTH JRB
 # Service: US AIR FORCE
 # State: TX
 # Country: USA
 # Author: GIM
 # Date Created: 31 Oct 2011
 # Date Last Modified: 31 Oct 2011

end_firingareas

begin_targetareas

end_targetareas

begin_equivalentyields

Equivalent Yield Name: BLACK POWDER
Pressure Equivalent TNT Multiple: 0.4600
Impulse Equivalent TNT Multiple: 0.2170
 # Description: G.F. Kinney-1962, ANSI S2.20-1983
 # Date Created: 1 Jan 1998
 # Date Last Modified: 1 Jan 1998

end_equivalentyields

begin_cselacousticefficiencies

end_cselacousticefficiencies

begin_directivityspectra

end_directivityspectra

begin_cseldirectivities

end_cseldirectivities

begin_noisesources

Noise Source Code: EBP05
Weapon Class: EXPLOSIVE
 # Weapon Type: EXPLOSIVE
 # Weapon: BLACK POWDER
 # Charge Increment: 0.025 KG (0.055 LBS)
Explosive Charge Weight (kg): 0.0250
 # Charge Increment Description:
Equivalent Yield: BLACK POWDER

end_noisesources

begin_activitydetails

Detail Record Number: 1

Firing Area: TRAINING RANGE_POINT_POINT
Firing Noise Source: EBP05
Firing Height: 1.00
Target Area:
 # This Acitivty Detail uses no Target Area
Number of Day Shots: 8.00000000
Number of Night Shots: 6.00000000
 # Activity Detail Date:
 # Activity Detail Description:
 # Date Created: 1 Jan 1950
 # Date Last Modified: 28 Nov 2011

end_activitydetails

begin_frequencyweighting

Frequency Weighting Name: C WEIGHTING
Band 0: -45.30
Band 1: -42.20
Band 2: -39.10
Band 3: -36.00
Band 4: -32.90
Band 5: -29.80
Band 6: -26.70
Band 7: -23.60
Band 8: -20.50
Band 9: -17.40
Band 10: -14.30
Band 11: -11.20
Band 12: -8.50
Band 13: -6.20
Band 14: -4.40
Band 15: -3.00
Band 16: -2.00
Band 17: -1.30
Band 18: -0.80
Band 19: -0.50
Band 20: -0.30
Band 21: -0.20
Band 22: -0.10
Band 23: 0.00
Band 24: 0.00
Band 25: 0.00
Band 26: 0.00
Band 27: 0.00
Band 28: 0.00
Band 29: 0.00
Band 30: 0.00
Band 31: 0.00
Band 32: -0.10

Band 33: -0.20
Band 34: -0.30
Band 35: -0.50
Band 36: -0.80
Band 37: -1.30
Band 38: -2.00
Band 39: -3.00
Band 40: -4.40
Band 41: -6.20
Band 42: -8.50
Band 43: -11.20

end_frequencyweighting

begin_metrics

Metric Name: DNL (104 x 24h)
Frequency Weighting: C WEIGHTING
Contour Metric: DNL
Silence Threshold: 65.00
Assessment Period (h): 2496
Date Created: 24 May 2000
Date Last Modified: 24 May 2000

end_metrics

Location:

Proposed EOD Practical Training Area

Type of Analysis:

Peak Noise Level

Description:

The BNOISE2 computer modeling program (USACHPPM, 2003) was used to assess the peak noise associated with single detonation events. Peak noise levels were calculated for PK15(met), PK50(met), and PK90(met) with unweighted decibels (dBPs). The EOD Practical Training Area would detonate a maximum of 0.051 lbs NEW of smokeless powder. Training at the range would occur approximately two days per week (Monday – Friday) and would consist of up to two detonations per training day. Detonations would normally occur between 7:00am and 4:00pm. Nighttime training events would be identical to daytime training events and would occur up to three times per year (i.e., six total nighttime detonations per year).

Assumptions:

- Each detonation would contain the maximum NEW of 0.051 lbs. of HD 1.4 explosives (i.e., smokeless powder). However, smokeless powder is not included as a potential input in the BNOISE2 model. Therefore, modeling assumed 0.055 lbs of black powder per detonation.
- The "BN3.2 Weather Emulation" scenario was selected in BNOISE2.

BNOISE2 Model Output (Daytime Operations):

The output provided below is from the PK15(met) model run. Although not provided here, model runs were also conducted for PK50(met) and PK90(met), and the output from these runs would be identical except for the metric selection.

CASE_BCALC_v1.x

begin_description

#Date/Time Created: 28 Nov 2011 16:30
#Case File Name: C:\BNOISE2\Cases\11.28.11 TrainPeak1.dat
#BNOISE2 v1.3.2003-07-03

#
Receiver Grid Selection = NAS FORT WORTH JRB-NEIGHBORS
Metric Selection = PK, 15, NO WEIGHTING
Activity Selection = TRAINING RANGE PEAK
Include Terrain: False
Include Land-Water: False
#

```
  # Installation Name: NAS FORT WORTH JRB
  # Service: US AIR FORCE
  # State: TX
  # Country: USA
  # Author: GIM
  # Date Created: 31 Oct 2011
  # Date Last Modified: 28 Nov 2011

end_description


begin_bcalccommands

  # This section is for diagnostic purposes only
Draw Firing Areas: .true.
Draw Target Areas: .true.
Draw Trajectories: .true.
Draw Registration Marks: .true.
Write Annotations: .true.
Calculate Contour Grid: .true.

end_bcalccommands


begin_sound_propagation_types

Propagation Directory Name: C:\BNOISE2\support\

Propagation Type: BN3.2 DAY FOCUS
Downwind Table: noloss
Downwind Corrections: dfocus.st
Upwind Table: noloss
Upwind Corrections: dfocus.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY BASE
Downwind Table: noloss
Downwind Corrections: dbase.st
Upwind Table: noloss
Upwind Corrections: dbase.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 DAY NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: dneg.st
Upwind Table: noloss
Upwind Corrections: dneg.st
  # Date Created: 7 Jun 1999
  # Date Last Modified: 7 Jun 1999
```

Propagation Type: BN3.2 DAY EXCESS NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: dexneg.st
Upwind Table: noloss
Upwind Corrections: dexneg.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT FOCUS
Downwind Table: noloss
Downwind Corrections: nfocus.st
Upwind Table: noloss
Upwind Corrections: nfocus.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT BASE
Downwind Table: noloss
Downwind Corrections: nbase.st
Upwind Table: noloss
Upwind Corrections: nbase.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: nneg.st
Upwind Table: noloss
Upwind Corrections: nneg.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

Propagation Type: BN3.2 NIGHT EXCESS NEGATIVE GRADIENT
Downwind Table: noloss
Downwind Corrections: nexneg.st
Upwind Table: noloss
Upwind Corrections: nexneg.st
Date Created: 7 Jun 1999
Date Last Modified: 7 Jun 1999

end_sound_propagation_types

begin_propagation_occurrence_by_azimuth

Propagation Type: BN3.2 DAY FOCUS
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 5
Nighttime Occurrence (pct): 0

Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY BASE
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 25.4
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 40.8
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 DAY EXCESS NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 28.8
Nighttime Occurrence (pct): 0
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT FOCUS
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 5.6
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT BASE
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 33.9
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 28.8
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

Propagation Type: BN3.2 NIGHT EXCESS NEGATIVE GRADIENT
Propagation Azimuth (deg): 0
Daytime Occurrence (pct): 0
Nighttime Occurrence (pct): 32
Date Created: 9 Aug 1999
Date Last Modified: 9 Aug 1999

end_propagation_occurrence_by_azimuth

begin_receivergrid

Receiver Grid Name: NAS FORT WORTH JRB-NEIGHBORS
UTM Zone: 14
SW Corner Easting: 637870.00
SW Corner Northing: 3618368.00
EW Overall Size: 20000
NS Overall Size: 20000
Mesh Spacing: 20
 # Installation Name: NAS FORT WORTH JRB
 # Service: US AIR FORCE
 # State: TX
 # Country: USA
 # Author: GIM
 # Date Created: 27 Oct 2011
 # Date Last Modified: 31 Oct 2011

end_receivergrid

begin_maps

 #Land-Water XYW Map File Name: None
 #Terrain XYZ Map File Name: None

end_maps

begin_firingareas

Firing Area Name: TRAINING RANGE_POINT_POINT
UTM Zone: 14
East1: 648499.00
North1: 3626476.00
Percent1: 100.00
Elevation: 171.00
 # Easting: 648499.00
 # Northing: 3626476.00
 # EastWest Size: 0.00
 # NorthSouth Size: 0.00
 # Azimuth: 0.00
 # Installation Name: NAS FORT WORTH JRB
 # Service: US AIR FORCE
 # State: TX
 # Country: USA
 # Author: GIM

```
  # Date Created: 31 Oct 2011
  # Date Last Modified: 31 Oct 2011

end_firingareas


begin_targetareas

end_targetareas


begin_equivalentyields

Equivalent Yield Name: BLACK POWDER
Pressure Equivalent TNT Multiple: 0.4600
Impulse Equivalent TNT Multiple: 0.2170
  # Description: G.F. Kinney-1962, ANSI S2.20-1983
  # Date Created: 1 Jan 1998
  # Date Last Modified: 1 Jan 1998

end_equivalentyields


begin_cselacousticefficiencies

end_cselacousticefficiencies


begin_directivityspectra

end_directivityspectra


begin_cseldirectivities

end_cseldirectivities


begin_noisesources

Noise Source Code: EBP05
Weapon Class: EXPLOSIVE
  # Weapon Type: EXPLOSIVE
  # Weapon: BLACK POWDER
  # Charge Increment: 0.025 KG (0.055 LBS)
Explosive Charge Weight (kg): 0.0250
  # Charge Increment Description:
Equivalent Yield: BLACK POWDER

end_noisesources
```

begin_activitydetails

Detail Record Number: 1
Firing Area: TRAINING RANGE_POINT_POINT
Firing Noise Source: EBP05
Firing Height: 1.00
Target Area:
 # This Acitivty Detail uses no Target Area
Number of Day Shots: 1.00000000
Number of Night Shots: 0.00000000
 # Activity Detail Date:
 # Activity Detail Description:
 # Date Created: 31 Oct 2011
 # Date Last Modified: 31 Oct 2011

end_activitydetails

begin_frequencyweighting

Frequency Weighting Name: NO WEIGHTING
Band 0: 0.00
Band 1: 0.00
Band 2: 0.00
Band 3: 0.00
Band 4: 0.00
Band 5: 0.00
Band 6: 0.00
Band 7: 0.00
Band 8: 0.00
Band 9: 0.00
Band 10: 0.00
Band 11: 0.00
Band 12: 0.00
Band 13: 0.00
Band 14: 0.00
Band 15: 0.00
Band 16: 0.00
Band 17: 0.00
Band 18: 0.00
Band 19: 0.00
Band 20: 0.00
Band 21: 0.00
Band 22: 0.00
Band 23: 0.00
Band 24: 0.00
Band 25: 0.00
Band 26: 0.00
Band 27: 0.00
Band 28: 0.00

Band 29: 0.00
Band 30: 0.00
Band 31: 0.00
Band 32: 0.00
Band 33: 0.00
Band 34: 0.00
Band 35: 0.00
Band 36: 0.00
Band 37: 0.00
Band 38: 0.00
Band 39: 0.00
Band 40: 0.00
Band 41: 0.00
Band 42: 0.00
Band 43: 0.00

end_frequencyweighting

begin_metrics

Metric Name: PK, 15
Frequency Weighting: NO WEIGHTING
Contour Metric: PK
Silence Threshold: 0.00
Assessment Period (h): 0.000277777813607827
Exceedance Percent (pct): 15.00
Date Created: 12 Aug 1999
Date Last Modified: 12 Aug 1999

end metrics

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